

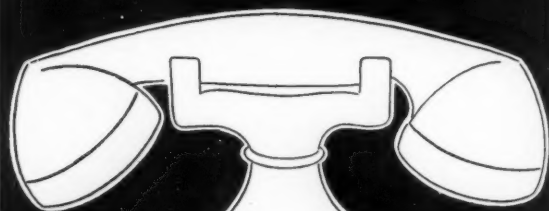
AMERICAN

FORESTS



SEPTEMBER 1943

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# AMERICAN FORESTS

VOLUME 49 SEPTEMBER, 1943 NUMBER 9

Editor  
OVID BUTLER

Associate Editors  
LILIAN CROMELIN ERLE KAUFFMAN

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## American Forests

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THE  
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The American Forestry Association, founded in 1875, is a citizens' organization for the advancement of intelligent management and use of the country's forests and related resources of soil, water, wildlife and outdoor recreation.

Its educational activities seek to bring about a better appreciation and handling of these resources, whether publicly or privately owned, that they may contribute permanently to the welfare of the nation and its people.

In addition to publication of its magazine—AMERICAN FORESTS—designed to keep before the people of the country important conservation questions and issues, the Association carries on educational work in various fields including forest fire prevention, reforestation, protection of wildlife, prevention of soil erosion, preservation of wilderness areas, establishment of national forests and parks, advancement of forestry by private endeavor, the teaching of conservation in schools and the promotion of research in timber growing and forest utilization.

The Association is independent and non-commercial, and has no connection with any federal or state governments. Its resources and income are devoted to the advancement of conservation in the interests of public welfare, and all citizens are welcomed to membership.

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# The Forest Exchange

## Big Tree Markers

SIR: I was extremely interested in reading the article "Tree Trails" in the July issue of AMERICAN FORESTS. Your search for the largest and finest trees of every species in this country is indeed a thrilling one and deserves, I feel, the most energetic prosecution possible.

I am wondering whether it would not be possible for the Association, with the cordial cooperation of federal and state highway authorities, to place rustic markers at the nearest convenient highway point to each tree marking the distance to the tree in question?—*L. McCormick-Goodhart, Silver Springs, Maryland.*

## Dream Mountain

SIR: I want you to know how much I enjoyed John Pratt Whitman's "Dream Mountain" in your June issue.

While in New England a few years ago, I also came to Chocorua. I have never forgotten it. Rising like a monarch there across the lake, jutting up into the sky—forceful, dominant, majestic. I had heard Indian legends about it and have found the recent novel by LeGrand Cannon, Jr., which concerns it. So I was glad to get this more intimate acquaintance through Mr. Whitman's story of the Kansas youth and his dream mountain.

I also enjoyed his pencil paintings which have captured the spell of this mountain very well—the great heights and depths, the rocky ledges and wind-swept trees, the great long slopes, the strange mist and cloud effects—the beauty and strength and spirit of it all.

I wish we could have more studies and sketches like this on our mountains.—*John D. Kendig, Manheim, Pennsylvania.*

## How "American Forests" Serves

SIR: This is to give credit where credit has long been due, and to tell you the place AMERICAN FORESTS fills in my life.

Although I have always lived in the city, and even now am living in a stuffy hotel surrounded by city life, I love the woods, trees, and wildlife. Your magazine has long meant to me a breath of the real outdoors, and I read it from cover to cover, even the advertisements.

Your pictures are delightful, the general make-up is most pleasing, and some of the articles are perfect gems. In the June issue, the article, "Dream Mountain" by John Pratt Whitman is as lovely a bit of prose as I have ever read, and most suitably illustrated.

At one time for two years I and my son had a little house with a few scrubby trees in the yard. By following the information I had gleaned from AMERICAN FORESTS I was able to encourage those trees to step out and grow even in that little time far more luxuriantly than trees in the vacant lots around or in any other yards. Many friends have asked me about care of trees, and sometimes I can speak like a veteran and expert by quoting from your magazine. All of which has proved to me the infinite pains you go to to have your information practical and accurate.

Whenever it has been my good fortune to be in the woods I am able to pick out many of the trees and tell something of their characteristics and uses, because of what I have read in AMERICAN FORESTS. This gives me added pleasure, and has added greatly to my understanding of the importance of our trees.—*Mrs. Lucile Huntington Shoop, Boston, Massachusetts.*

## Trail Riders Report

SIR: This is my third "thank you" for a grand vacation made possible by The American Forestry Association's Trail Riders of the Wilderness. The ride through the Great Smoky Mountains was a beautiful one, and I certainly congratulate the Association for maintaining such a high standard in the face of all the existing difficulties of food and transportation.—*Miss Miriam Houdlette, Melrose Highlands, Massachusetts.*

SIR: I would like to put in a word of appreciation for a grand trip with the Trail Riders. The Great Smoky Mountains is so different from the western samples I have had on previous trips. I could never express a preference, since each trip was unlike the others, and I loved them all.

As always, a large part of the pleasure was in getting to know other riders. One comes to "goodbyes" regretfully, close friends as only people can be who have camped together in the wilderness.

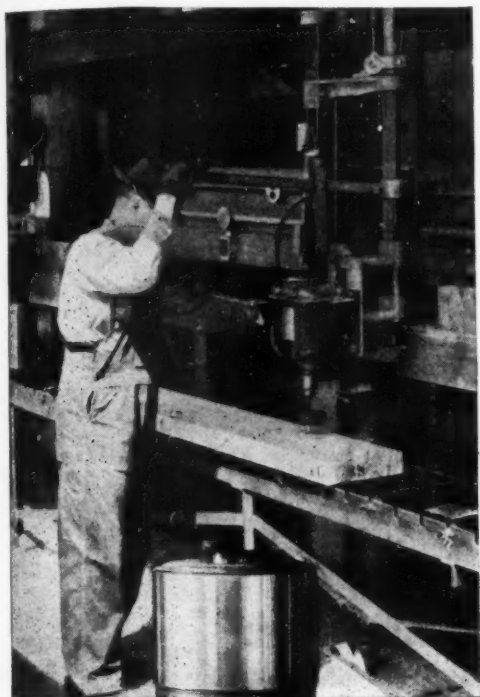
I hope it will be possible to continue the trips next year.—*Miss Margaret Gausewitz, Milwaukee, Wisconsin.*

## Palm of Praise

Again I must hand the palm of praise to you for the August number of AMERICAN FORESTS. It is all good, but particularly excellent, it seems to me, is the article on "Greedy-Rooting Shade Trees," by Mr. Manning. He has done a good job of fact-stating.—*J. Horace McFarland, Harrisburg, Pa.*

AMERICAN FORESTS





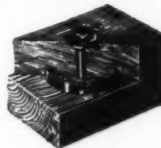
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# THE EDITOR'S LOG

## *The Post-War Home*

It is reliably estimated that after the war we shall need new homes at the rate of a million a year for ten years—a need greater than that of 1940 by sixty percent. If this be true, a great many Americans will be intensely interested in what Dr. Wilson Compton, secretary-manager of the National Lumber Manufacturers Association, has to say about their future houses.

"The post-war house will be compact, will have fewer rooms," the lumber executive said recently in an address before the annual meeting of the National Industrial Conference Board. "The rooms will be functionally more convenient, though not revolutionary in design.

"The average house will be smaller. Improved engineering will reduce by twenty percent the amount of lumber necessary to build a house. The lumber itself will be more largely refined, fabricated, treated and assembled.

"Many suppliers of building materials and equipment will prefabricate or pre-assemble parts which the builder can incorporate at substantial job savings; kitchens complete with standing equipment; bathrooms containing fixtures, and plumbing ready to button up, like mill-made doors and windows; recreation porches which can be attached or detached.

"Factory produced panels including movable interior walls, so that one room may be converted into two, or several rooms into one are obvious prospects; as are floor section assemblies and prefabricated wall units for exteriors. It will be no more difficult to fit them into structures of distinctive dimensions and design than it is now to fit individual boards.

"We will see less promiscuous use of the hammer and the saw on the job. Gradually, we will use fewer nails and more glue. We may likely see wood-built houses without shrinkage or warping, water-proof, resin-bonded, with many laminated parts, and fire resistant."

The problem of the lumber industry in the post-war years, however, is more than to provide homes which more people can afford to buy, Dr. Compton pointed out. It is also to provide its share of the national employment necessary to maintain the peace which may have been won by war. In this respect he estimates a volume of lumber and timber prod-

ucts in home building nearly a third greater than in 1940, and at least a comparable increase in employment in the woods and in the mills.

"The war," he concluded, "has forced lumber into many uses, both old and new. It has speeded the conversion of wood from a simple carpentry to a modern engineering material and lumber from a timber-using to also a timber-growing industry. Also it has accelerated the development of new metals, alloys, compositions and plastics which after the war will seek a permanent place in construction uses. The competition between materials, I anticipate, will be more severe than ever. Lumber will lose some of the uses multiplied during the past few years,—but not all. In its various forms, both old and new, it will, I think, continue to provide the backbone of an expanding home building industry."

## *Where Honor is Due*

When, during the summer of 1933, The American Forestry Association launched the first expedition of its Trail Riders of the Wilderness, it was experimenting with an idea. It wanted to discover whether or not the American public, grown accustomed to speed-highways and convenient resorts, would leave the beaten vacation paths for the adventure of exploring by horseback and afoot the little known back country of our western national forests and parks.

The answer is eloquently expressed by the fact that, as this is written, the *fiftieth* expedition of the Trail Riders is somewhere in the magnificent Flat Tops Wilderness of the White River National Forest in Colorado. In eleven years eight hundred men and women from practically every state in the Union have, under the leadership of the Association with the cooperation of the United States Forest Service and the National Park Service, turned their backs on the beaten paths for the unfrequented trails of the major wilderness areas of ten different states, riding approximately seven thousand miles.

These men and women, for the most part city-dwellers, have shown conclusively that the instinct to pioneer has survived the super-highways, along with their comforts and conveniences. And this in the pre-war days of unlimited gasoline and rubber, of highly competitive travel at-

tractions. Few among them have sought merely the thrill of a novel vacation. The great majority are everyday Americans responding to an unconquerable urge for the beauty and peace of unspoiled nature, for the tonic of age-old forests and unscarred mountains, and for the freedom of boundless horizons. Testifying to this are Trail Riders who return to the wilderness year after year. Miss Marian Mair, of Oneonta, New York, for example, who since 1935 has ridden nearly 1,500 miles of back country trails with ten expeditions; or Mrs. Margaret Bruns, of Long Island, New York, who during the same period has ridden 1,300 miles with nine expeditions; or A. H. Hutchinson, of Chicago, who on seven expeditions has ridden 1,000 miles.

Riding with six expeditions have been Miss Mary Downing of Kansas City, Missouri; David Beals, also of Kansas City; and Miss Janet V. Lee of Evanston, Illinois. On five expeditions have been Edward M. Ruppe of Cleveland, Ohio; Miss Emma Bolzan of West Collingwood, New Jersey; Miss Lillian Judd of Waterbury, Connecticut; Bruce S. Nichols of Santa Barbara, California; Mrs. L. F. Gates of Wilmette, Illinois; and Mrs. Pearl W. Dore of Baltimore, Maryland.

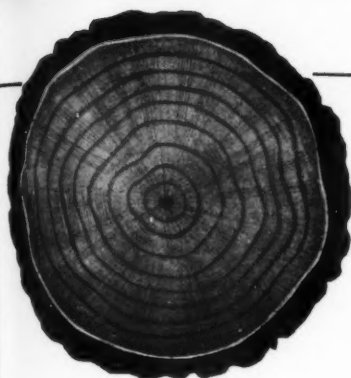
Honor is due these ranking Trail Riders. Not alone are they keeping alive the spirit of the pioneer, but they symbolize a free people definitely awakened to the true values of a great outdoor heritage.

We salute them.

## *Dutch Elm Foreign Relations*

Maladies of trees resemble those of humans in their lack of respect for international boundaries. The Dutch Elm disease, first found on the continent of Europe, became established in Britain shortly after the last war and in the United States a few years later. It attacks European and American elms with nearly equal avidity and deadliness. Its spores are carried from tree to tree by insects, some species of which are common to both continents.

The disease, when it was discovered, was not well known to forest pathologists in either England or the United States, but they cooperated in exchanging data and use of laboratory facilities to the end that the working up of fundamental scientific data on the disease and the practi-



means of control had many aspects of an international project.

After control measures were worked out it was necessary to present information in a form useful to landowners. This was accomplished recently on this side of the Atlantic by James M. Walter and Curtis May of the U. S. Department of Agriculture in Circular No. 677—"The Dutch Elm Disease and Its Control."

In view of the paper shortage in Britain (see page 438), it is not surprising that the government was unable to provide for a similar publication. The American circular was therefore written so as to be equally useful to landowners in both countries, and copies are being supplied to Britain for distribution there.

Not quite so happy an example of cooperation in disease control occurred in our own Congress recently when a rider was attached to the Agricultural Appropriation Bill for 1944 (Public Law 129, 78th Congress). This rider hampers the work of the Bureau of Entomology and Plant Quarantine in the removal of infested elms, which is necessary to check the spread of the disease, by requiring that the owners pay removal costs. Perhaps this prohibition is based on a sound legal principle. Nevertheless, in wartimes with labor shortages and frequent lack of interest in problems thought to be of peacetime import only, this is bound to mean that most of the diseased trees will remain standing to infect other trees on other property. Tree diseases are indifferent to property lines as well as international boundaries, and there are far more of the former.

#### Down Brazil Way

Down in Brazil, wildlife is making a new and unique contribution to the war economy by helping to meet the shortage of automotive power. It isn't a case of using husky 'gators to snake logs from swampy jungles or of har-

nessing them like oxen to wheeled carts. With the alligator, it is a case of giving his life to his country.

From the Office of Coordinator of Inter-American Affairs in Washington comes the story based on information received from the Northern Agricultural Institute of Brazil to the effect that alligators are being drafted not for the blood but for the oil that is in their scaly bodies. "These reptiles after processing," says the report, "provide an oil suitable for use in motors, and a mixture of alligator oil and regular fuel oil is being used in the electric power plant at Tefe.

In a much larger and seemingly more practical way, the forests of Brazil are contributing to the automotive fuel shortage in that country by supplying wood gas to take the place of gasoline in the operation of trucks and busses. Gasogenes, according to the Office of the Coordinator of Inter-American Affairs, are becoming increasingly common. "More than 2,000 of these devices, which burn charcoal to create a propulsive gas, are now in use in the capital district, and another 10,000 gasogene-equipped vehicles are operating in the Sao Paulo area.

"These devices have proved so successful that the Brazilian Government recently authorized the importation of materials needed to manufacture 11,000 more charcoal-gas units in the Sao Paulo area. Two large factories have been erected for this purpose, and are producing about forty burners a day. The devices now sell for about \$200 each.

"Some of the units are capable of generating 1,000 horsepower and gasogene-busses running between Santos, the coffee port, and Sao Paulo have shown excellent results. In a recent race for the benefit of the Brazilian Red Cross, thirty-two stock cars, equipped with 'gasogene' apparatus, attained average speeds as high as forty miles per hour. The devices are likewise being used on farms to provide an economical source of power and lighting."

In the light of the increasing use of gasogenes in practically all other civilized countries of the world, our own continuing shortage of gasoline raises the question why greater progress is not being made in this country to adapt the gasogene unit to the numberless trucks, tractors and passenger cars that are growing cold for lack of fuel.

#### Bear First-Aid Treatment

To the legion of men and women who, through patriotic impulse and national preparedness, have successfully completed the standard Red Cross first-aid course, the following incident, related by Paul W. Stickel of the Northern Rocky Mountain Forest and Range Experiment Station, Missoula, Montana, should prove not only entertaining but decidedly enlightening as an example of what a well trained first-aider can do.

"A few years ago," writes Forester Stickel, "the staff of the Powell Ranger Station had just completed a Red Cross first-aid course when a yearling brown bear made his appearance. Weighing about 150 pounds, the animal began raiding the garbage pit at night with a regularity that soon became a nuisance. Ways and means of putting a stop to these escapades were being discussed when Bruin himself provided an answer by falling into the galvanized pit out of which he was unable to climb.

"Not wishing to kill the bear, a log was lowered into the pit in the hope that he could manage his own escape. But it didn't work. As an added impetus, a bundle of oily rags was ignited and thrown into one corner. Black smoke boiled up, but still the yearling showed slight interest in his means of exit. At length a cautious inspection gave the answer. The oily smoke had asphyxiated the beast.

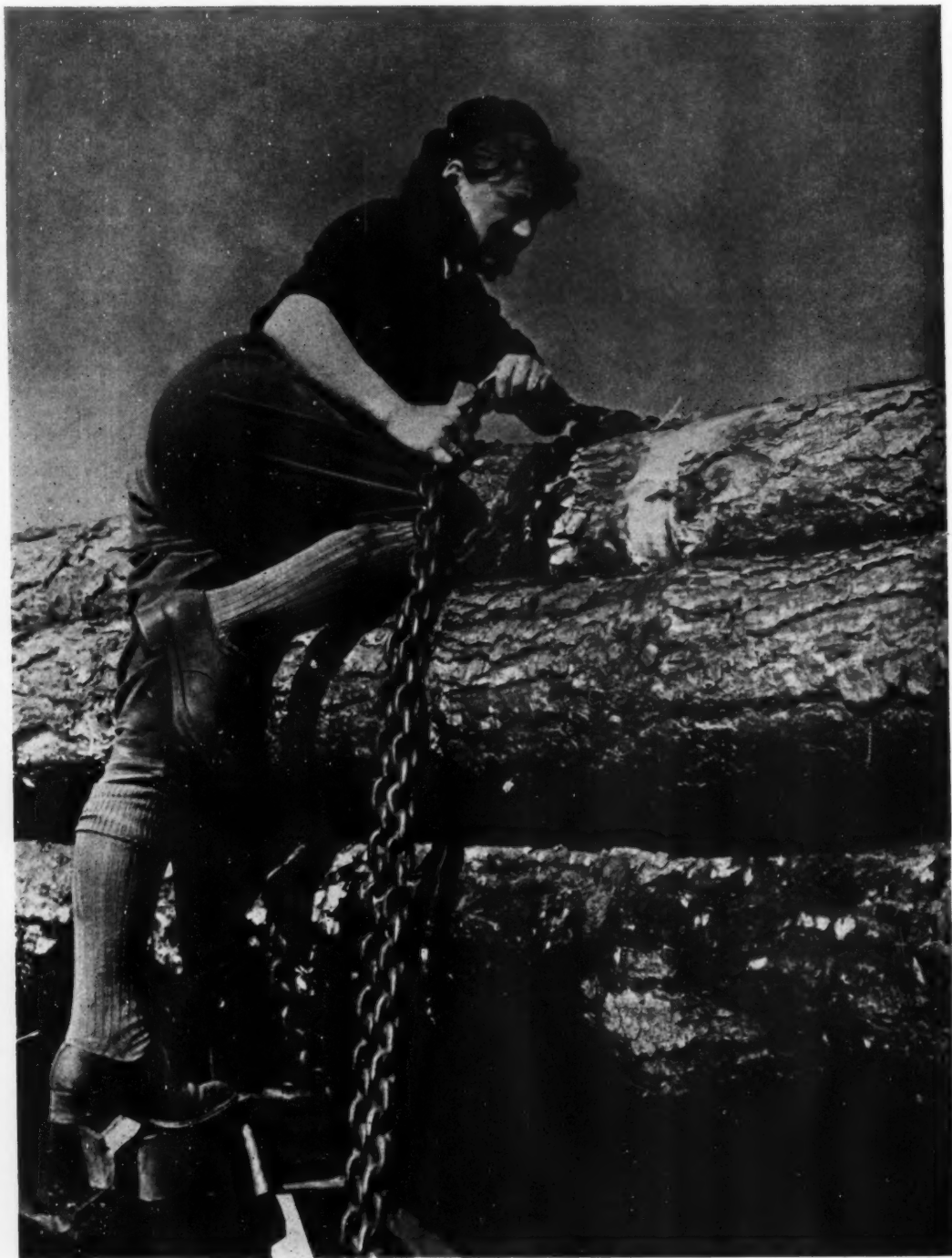
"Feeling rather badly over this turn of events, the rangers gathered up ropes and hauled him out of the pit. He was, to all appearances, quite dead. The spell of their first-aid course was still upon them, however, and they had been taught that breathing can quite often be restored by artificial respiration. Here was a chance to find out—to put their training into practice. Bruin was therefore turned over on his stomach, his head angled to one side, and one of the rangers straddled his back.

"Applying the Red Cross prone pressure method and count, breathing was restored in the bear within a short time, to the surprise of some of the skeptics present. When Bruin had recovered sufficiently to get to his feet, he wobbled off slowly into the woods, a sadder but wiser bear."

*Onea Rusten*

# "LUMBERJILLS" OF BRITAIN

By ROBIN WALKER



*It's a man's job—but Britain's lumbergirls, selected for their skill and stamina, are doing it. Less than five percent of the volunteers find work in the woods too difficult*





## The Women's Timber Corps is Working for Victory

WOMEN are playing a more important role in this war than in any other in history. Britain alone has hundreds of thousands of women volunteers and conscripts in various auxiliary branches of the armed and civilian services, plus those working in war plants. Among the least publicized but most unusual of the British services is the Women's Timber Corps. It is part of the Women's Land Army but operates under the Home-Grown Timber Department of the Ministry of Supply. It is entirely voluntary.

Women were employed in woods work to a small extent in the first World War. After a slow start in this one both their numbers and range of their work have greatly increased. They have overcome both prejudice and skepticism. For the duration, at least, "lumberjilling" has become an accepted woman's occupation. There are now thousands of lumbergirls, all selected for physical and psychological qualifications. The age limits are from seventeen to forty, with the majority of volunteers coming from the younger age classes. The average woods worker is probably between twenty and twenty-five.

When a call was issued for work in lumberjill camps there was a ready response. Because a strong physique is essential, most recruits are from the country, although the romance of the woods has attracted many city girls. These come from the shops, meaning by that, as the English do, workers in retail sales establishments. "Shop girls," reports Councillor J. J. Robertson, Senior Labour Officer for Scotland, "perhaps because of their peacetime jobs demanding stamina, have proved the most successful women forestry workers in Scotland." The reason seems to be that they are trained to stand on their feet for long hours at a time.

When the Corps was organized it was thought that the girls' duties would be confined to log and lumber scaling and grading, especially of pitprops which must be carefully selected and measured. They quickly mastered these skills and might have remained at them had not their desire to do the whole job forced the pace and brought them the honor of becoming full-fledged lumberjills.

The realization of the possibilities for fuller use of women as woods workers led to a broader appeal being issued in April of 1942. Newspaper and radio publicity supplemented by direct canvass among girls eligible for some form of national service was so successful that the organization has since received more recruits than it can use.

When volunteers apply they are interviewed and told of the nature of the work. If they prove to be good material and decide to enlist they are given a month's training, after which, if they make good, they are graduated into the camps. Less than five percent have quit. In our experience in Britain of the enforced incorporation of women into industry a five percent loss compares favorably with other voluntary services,



*European larch, critically needed pitprop timber, falls under the ax of the Women's Timber Corps*

and with industrial work in general. It follows that the timberjills like their work and intend to do the job they volunteered to do.

The month at a training camp includes instruction in timber felling,

"shedding" or trimming out tops and branches, use of cross-cut and mechanical saws, and scaling of general and specialized products. This is followed by instruction in truck, tractor and sawmill machinery operation. After practical

experience on the job there is scarcely a woods or mill task the girls cannot handle professionally except those where sheer muscular strength is required.

They are issued uniforms of tight fitting breeches, knee-length stockings, waisted plum-colored finger-length coats and "school girl" fawn-colored hats.

Pay is slightly higher in the Timber Corps than in the Land Army. Each worker gets the equivalent of \$9.20 weekly in American money. In no case does a girl clear less than \$4.00 after paying for board and food, the average cost of which in camps ranges from \$2.00 to \$4.00. Where "lodged out," the cost is usually higher, and wages are correspondingly increased. Seven or eight hours constitutes the work day, depending on needs of the job.

Lumber camps in Britain, as in Canada and the United States, are apt to be in remote and sparsely inhabited districts, so that most of the girls live in specially constructed camps. Except that they are built of corrugated iron, they resemble American CCC camps.

The Timber Corps authorities see to it that each of the camps have radios, gramophones and books, provided officially and by private generosity. Women welfare officers tour the camps, speaking on personal or general subjects. Entertainers are being sent to the camps to an increasing extent.

When a new operation is begun a camp is established and a portable mill set up. The area is then clear-felled and logs are skidded in by tractor or other means. After sawing the lumber is piled to season. Later it is transported by lorries (trucks) to its destination or to a rail point. Fortunately for the girls, the timber is small and mostly light-weight pine, larch and spruce.

Only one job annoys them. When an area has been felled, the timber skidded and sawn and the camp ready to move on, slash must be cleared. That is the rule at all camps. Burning is the only solution—but slash burning is a messy job, and the ladies dislike it. Yet it must be done—and done it is.

The extent to which the lumberjills are helping might be shown by the fact that pre-war Britain imported over ninety percent of her timber requirements. Today with a vastly increased need for timber less than half her requirements are imported. That which the timber-girls harvest and manufacture goes to make camp huts for fighting men and women, ammunition boxes, pitprops and all the other thousands of wood uses necessary for a nation at war. If Britain adopts the proposed plan for large scale reforestation in the post-war period (see page 438), doubtless some graduates from the lumberjill camps will aid in the new enterprise.



*British women were employed in the woods during World War I (above), but only to a limited extent and on special work. Lumberjills of World War II (below) number in the thousands, are skilled in the use of ax and saw, truck and tractor — practically the whole run of woods and mill operations*





*It's mostly work for the lumberjills, getting out timber for pitprops or munition boxes*



*But there is time out to relax in their camps, or to dance with men of the Army Air Corps*





*Homeland of porcupines—the lake and forest country of Northern Wisconsin*

## ADVENTURE WITH PORCUPINE

**If You Believe, As Many Do, That These Quilly Woodland Creatures are Dull and Stupid — Here's a Chance to Change Your Mind**

By SAM CAMPBELL

OUTSIDE my cabin window, now thrown open to the summer breeze and to intimate view of a northern Wisconsin forest, there is a sound for which I have difficulty in finding a similitude. It is somewhat as if little grunting pigs had suddenly turned to song,—and within a very limited range had succeeded right well. The tones rise and fall with

the emotions and enthusiasm of their makers. There is distinctly an element of joy in them. Also, there is a certain siren appeal, a certain seductiveness. These tones are not breathed forth merely to gratify their creators in their release, but there is intent and purpose to them. They show plainly there is intelligence where they begin, and a very

definite aim which they are to attain.

But while I have difficulty in describing the sounds, I have no trouble in identifying them—or in knowing why they are uttered. It is the call of "Salt" and "Pepper," our pet porcupines. They call to me to desert this typewriter, to neglect the hundred things which lie before me for attention, and come out and

AMERICAN FORESTS



play! I answer with a greeting, "Hi, Salt! Hi, Pepper! What is the matter with you rascals?" But this is neither satisfying nor sufficient for them. Their voices rise in new crescendo at the sound of mine, but only by way of greater insistence.

They want me to come outside, to kneel with them on the pine-needle carpet where the twin flower and ground dogwood grow. They want to climb over me, harmlessly biting at my arms and ears, chewing on my hair, clumsily jumping and dancing about in what to them is their greatest moment of joy—a bit of play with one of their human friends. And I suspect that it will not be long before I shall yield to their appeal and go forth for a romp, because I like it as much as they. I shall pick them up, toss them about, lay them on their backs while I tickle their stomachs, run away from them while they come lumbering after me, and finally come back to work with several quills accidentally acquired in my hands, and a bit of skin knocked off my knuckles by those sharp, amber colored teeth of theirs. But I shall enjoy the tussle, as I have many times in the past.

Salt and Pepper are fourteen months old. They have lived with us on our two-acre island for their entire lives, with the exception of the first few days following birth. This has not been long as human beings rate time, but long enough to give us an interesting adventure filled with instruction and genuine pleasure. For these little bequilled pals have shown us how erroneous are the popular conceptions about porcupines, particularly the notions which have to do with their characters and intelligence.

It has been written and is often said that a porcupine is "the only animal that never plays." At our sanctuary we have had as pets many kinds of wild creatures—bears, raccoons, foxes, deer, chipmunks, squirrels, birds of different sorts and a pet skunk among others—and while we have never seen a creature without the ability to play, it seems to us that the porcupines are most persistent in it. In fact, they do more playing than anything else. With the exception of the mid-day hours of hot days, there is never a time when Salt and Pepper are not ready to go through their playground routine. It is not just because they live in a friendly atmosphere that this quality comes out. Since our attention has been directed to the species by this intimate experience, we have been more carefully observant of the wilder ones in the woods, and better able to interpret their actions. These, too, we see making the moves and performing the acts that we now know have no other purpose than amusement.

Certainly, we have found no evidence to support the popular and erroneous conviction that the porcupine is "the most stupid animal in the forest." The porcupine has met and mastered his environment. He is the best defended creature of the wilds. His marvelous array of savage quills are not for aggressive purposes. He lines his personal boundaries with an impenetrable fortress, which is intended only to keep aggressors away while he goes about minding his own business. That is a brand of intelligence beyond the world-conquering ambitions of certain human contemporaries! His slow actions are not dullness or sluggishness. It is proper



*Salt with the author. Playful and affectionate, he likes to be fondled*

porcupine, a synchronization with his plan of life, his needs and his supplies. He has learned to live in a small area of the world without entirely destroying his surroundings. True, the tree he feasts upon may die when he has taken too much of the bark, but in his natural manner of selection, his tree-kills are scattered in location and variety. There is no question but that in primitive forests his weeding out of trees was a most helpful contribution.

Of course, our human method of judging intelligence is often unintelligent itself. The criterion is too often some selfish or economic standard. It is in no way complimentary to myself, but I sense a bit of irritation when people ask me, "Well, what good is such-and-such a creature?" I presume the notion is that the creature in question must put money in our pockets or food in our stomachs to have a rating in the universe. But there is a larger economy in which values are more accurate. I would not stretch my contention so that it protects those things which are a threat to human welfare, but there is a virtue in the bare existence of a creature, whether his contribution to our food, clothes and dwellings is apparent or not. In this viewpoint, a porcupine is justified just by being a porcupine. A forest without a variety of native animals in it echoes with emptiness. There must be bears as well as balsams, wolves as well as willows, owls as well as oaks, porcupines as well as pines.

We moderns would do well to remember that "we cannot live on bread

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*These woodland pets, Salt and Pepper, have upset some popular concepts concerning the character and behavior of the porcupine*

# CHRISTMAS TREES TAKE TO THE FIELDS

By ALDEN COTTRELL

YOU can disjoin Henry Jeffers from his plantations about as readily as you can pry open an oyster with your bare hands. He is part and parcel of them. This we discovered when we visited them



*Henry Jeffers among  
his Christmas trees*

at Harford, Susquehanna County, Pennsylvania. Evergreen plantations photograph best against a background of snow. When Kenneth McConnell, Mr. Jeffers' superintendent, met us at Kingsley in a prosaic V8 instead of an old-fashioned sleigh, called a pung in the countryside, it did not look promising. As we climbed the hills back in Harford we found more snow than the V8 could plough through. If the weather stayed clear and Mrs. McConnell, reported by our host as the best cook he

has ever known, furnished such promised delicacies as roast chicken, home-made sausage and stacks of griddle cakes with real maple syrup, fluffy mashed potatoes, dill pickles and home-churned butter, the week-end was sure to be a success.

Henry Jeffers is a famous and dyed-in-the-wool dairyman. He was born in a dairy country, studied animal husbandry at Cornell. His devotion is boundless. Once when the milk smelled of garlic he sampled all the feed until he located the source of the trouble. He began his work with the Walker-Gordon Laboratories of Plainsboro, New Jersey, and ended his active business career a few months ago after having been its president for twenty-five years. He got his first and only job because, as he puts it, "I was the only one in my class capable of filling it, but," he adds, "there were only three of us and the other two weren't interested." As the country's foremost dairyman he has contributed heavily to the advancement of dairy practice. His best-known achievement is the development of the rotolactor, the milking machine that operates like a merry-go-round.

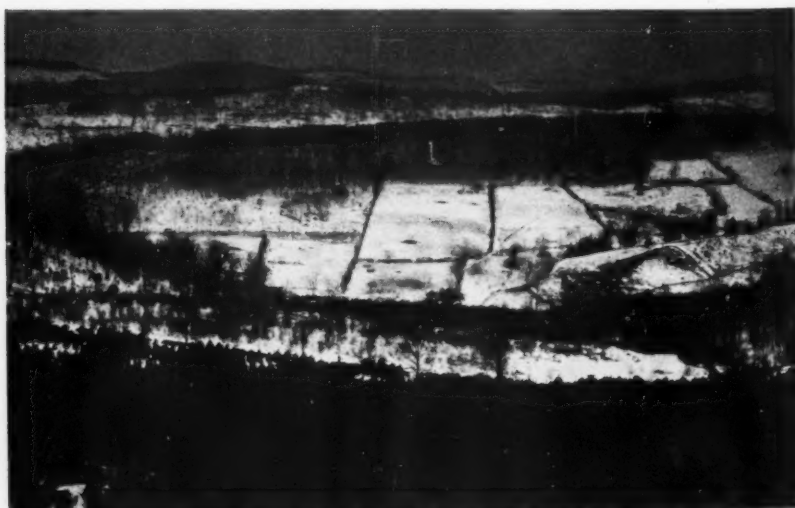
His interest in trees is as deep as his love of dairy herds. At a recent meeting of the Philadelphia Society for Promoting Agriculture, he was asked for a few remarks. "Perhaps," suggested the chairman, "Mr. Jeffers would like to say a

few words about cows." "No," said he, "I don't want to talk about cows, I want to talk about trees."

Henry Jeffers has a deep and abiding faith in conservation and demonstrates his conviction by example, rather than by preaching. He has been buying abandoned farms and planting the steep, rocky hillsides in his native Harford for fifteen years. He now has 500 acres of plantations, and expects to add to them. On the morning of our trip almost his first words were, "I've bought another farm since I saw you last, with a good house and barns, fields to plant and woods with one of the finest stands of young ash I've ever seen."

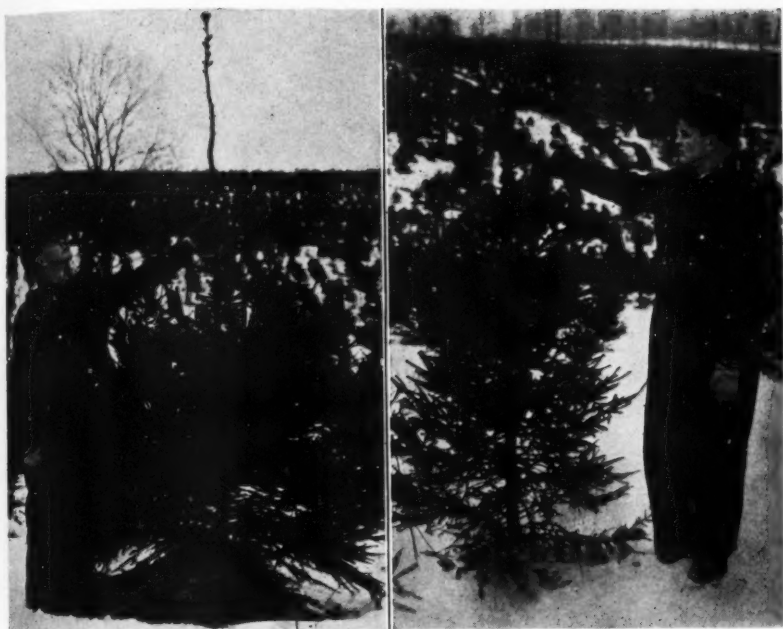
For years the vacant hillsides, the sub-marginal lands of this northern Pennsylvania county, have been Henry Jeffers' concern. Typifying the frugality of his New England forbears he believes that nothing should be wasted and least of all, land. What to do with the rough hillsides and other lands no longer used for farming is a problem throughout the Northeast. Here in his own Harford Township, he believes he has found the solution. It is a keen disappointment that his neighbors have shown so little interest.

Harford was settled by his ancestors and the story is worth telling. In the spring of 1790 nine young men left Attleboro, Massachusetts, in search of new homes on the frontier, then in New York



*The Harford hills, fields and forests—natural and planted*

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***Trees can grow too fast to be good Christmas trees. Pruning keeps them solid and compact***

and Pennsylvania. Arriving at Cooperstown, New York, they met William Cooper, father of James Fenimore Cooper, who was agent for a tract of wild land in Pennsylvania. He invited them to visit it with him. They sailed down the Susquehanna and made their way overland to what is now Harford. Here they purchased a rectangular tract one mile by four miles "for 1198 pounds lawful money of Pennsylvania." After returning to Attleboro they divided the tract into sixteen lots of 150 acres each, the remaining 160 acres to be kept as common property. Each partner drew two lots and when they returned to "Nine Partners," the name by which the settlement was long known, each partner selected the better of the two lots he had drawn. The one "who in the candid judgment of the company had the poorest lot of the eight already chosen should have his choice of the remaining eight lots and to proceed in this way until the whole was disposed of, which was happily done to general satisfaction."

Today the beautiful village of Harford lies within the original Nine Partners settlement and reflects the influence of its New England founders. Many of the homes are of typical New England architecture. The graceful, spired, Congregational church standing gleaming white on the knoll speaks eloquently of its Pilgrim ancestry. Even the family names have a New England sound.

When Harford was settled it was heavily timbered with beech, maple, white pine and hemlock. Settlement and land clearing were still going on when

Jeffers was a boy. He remembers it well. "First they cut down the huge white pines which were sawed at local mills. The hemlock was only valuable for the bark from which tannic acid was extracted. The brush was piled in windrows and burned. The ashes helped to

fertilize the ground. The stumps remained untouched and the hillsides were sowed to grasses. After the stumps had pretty well rotted they were pulled out, the land was ploughed and crops planted."

The rocks gathered in the fields were built into stone walls. On one parcel of 400 acres, Mr. Jeffers told us, there are five miles of stone walls. Visualize if you can the labor involved. During the last half century these fields have gradually been abandoned. The lowlands produce good pasturage and hay crops but the steep hillsides were wasteland until Henry Jeffers came along with his reforestation program.

When he made his first planting the idea of growing Christmas trees did not occur to him. It happened this way. After a couple of years he decided he needed to know more about forestry so he wrote to Syracuse requesting a "four-year forestry course in three hours." He took the course but never received a diploma and admits that this vitamin-pill instruction was more than he could absorb. Later Professor Heiberg of Syracuse came to visit his plantations. Queried Heiberg, "Why not plant Christmas trees?" "Never thought of it," responded Jeffers. Since then, plantings have been chiefly for Christmas trees.

In 1929 when the first plantings were made, 3,000 trees, principally red and white pine, were set out. In 1930 this was increased to 40,000 trees. In 1931



***Red pine plantation. Trees of tomorrow well on their way***





*Henry Jeffers is very proud of this fine stand of young ash*



*Red pine and Norway spruce grow well on land unsuited for farming*



*Soon the tree will outgrow the girl. A Norway spruce plantation*

the plantings were: 20,000 Norway spruce, 2,500 balsam fir and 2,500 Douglas fir. Although balsam fir had not been particularly recommended it was tried because it is the preferred Christmas tree in many Eastern markets. In 1932, 50,000 trees were set out. Since 1933, with a single exception, 100,000 trees have been planted. The total is now over a million.

Scotch pine, white and Norway spruce are now also used, the last chiefly because it is conventionally recommended for Christmas tree plantations. A study of markets and the results of the first cutting in 1942 indicate that many kinds of trees are acceptable for the Yuletide and the market is less restricted than generally believed.

Balsam fir has been quite successful and is now one of the principal trees planted. Too often its use is discouraged, largely because it grows slowly, particularly during the first few years, but this makes it desirable because it means thick, heavy foliated trees. Four-year transplant stock two years in the seed beds is used at Harford. The survival has been ninety-five percent. This is unusually high, due to selected well rooted stock, careful planting, and satisfactory rainfall immediately after planting. There is no special preparation of the site. Planting is by mattock. Trees are planted four by four feet apart which is standard space for plantations of this sort. Both pure and mixed plantings have been made. Mr. Jeffers leans more and more toward mixed plantations. They have several advantages; species suitable for Christmas trees can be mixed with those which are more properly timber trees. The Christmas trees serve as a "nurse crop" to induce natural pruning of the timber tree crop. Mixed planting also reduces the dangers from diseases and insects.

Soon after he began his Christmas tree planting it became evident that the plantations needed special treatment to produce best quality trees. After looking around he secured the help of a local high school teacher named Decker, whom he dubbed his "scout." During the winter the scout familiarizes himself with the next summer's work. He also watches closely for insects and diseases in the plantations and is a conferee when planting plans are made.

When school is over Decker with a crew of twelve high school girls goes to work. The trees are shaped by cutting back the leader and the first whorl of lateral branches as well as by judiciously pruning wherever else is necessary. This takes until early August. Some of the trees now are reaching substantial height and whether they will be pruned by using a ladder or will remain un-

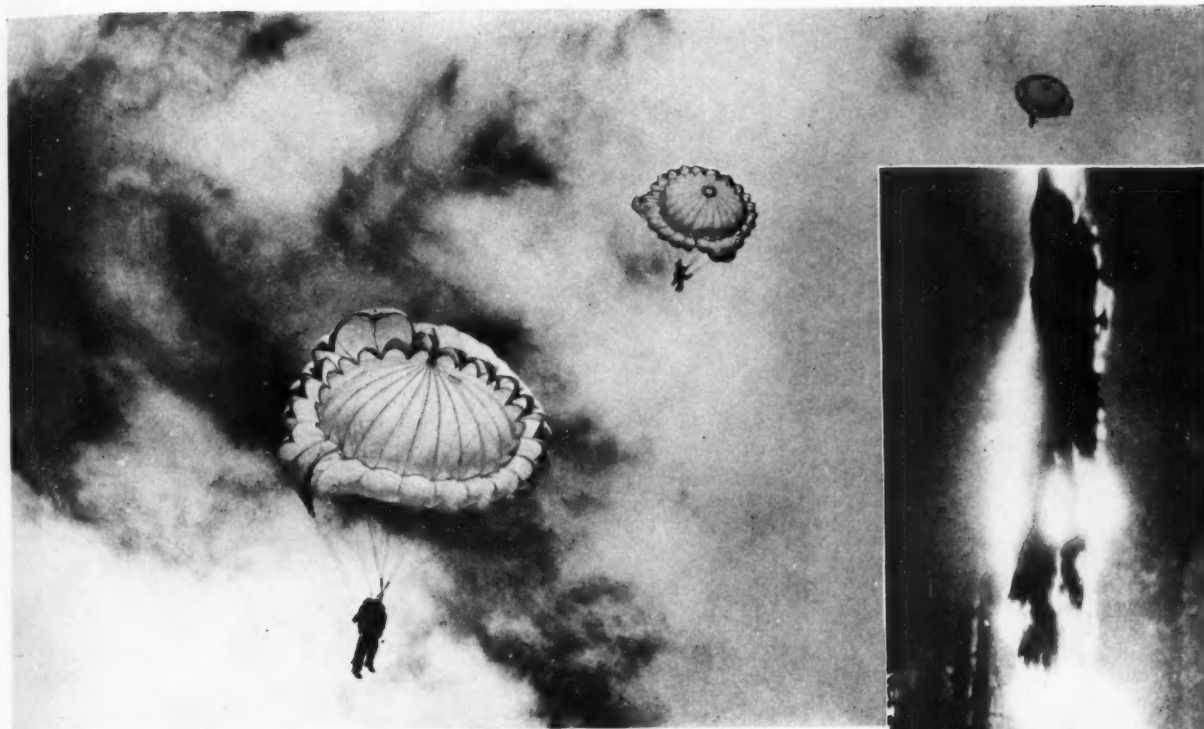
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AMERICAN FORESTS



# SKY-FIGHTERS OF THE FOREST

By EDMUND J. KERR



## Parachutists Are Saving Time, Money and Timber in the War Against Fire in Critical Northwest Forests . . .

EMBERS smoldering in an old charred snag. Tiny beds of fire left from a lightning strike during a brief midsummer storm a few days before. The coals are stirred and whipped into flame and scattered by the hot drying breeze that springs up again immediately after the shower.

A forest fire is started.

And it is in a manless, trackless forest region. It would take a crew of fire fighters a day, perhaps two, to walk from the nearest road-end. Yet within two hours of the time the spreading blaze is sighted by alert lookouts, a crew of trained men is on the spot, battling the fire before it has a chance to run amuck.

How is it done? Not by magic, but by the spectacular new time and money saving method of swift fire control developed by the United States Forest Service. Forest fires are being blitzed from the

air. Parachuting fire fighters, carefully selected and trained for their difficult and hazardous jobs, are dropping from the sky on embryo infernos in remote forest regions and stopping them cold before they even get warmed up.

The possibility of giant resource-destroying fires in the great timber stands of the Northwest, coupled with the growing manpower shortage, have made speed in fire control absolutely essential. So, lightning attack methods, usually associated with modern warfare, are being introduced with great success.

Because of its proven value in recent fire seasons, the Forest Service is expanding this new kind of war on the old fire enemy as rapidly as possible.

Let's follow a crew of these "smoke-jumpers," as they are called, into action and see just how they function.



We're in the dispatcher's office in the center of a dry and sparsely settled forest. It's a hot, late summer day—dry, with the accumulated dryness of the almost rainless season. The woods are tinder, and there has just been a lightning storm. Suddenly the phone rings.

The fire!

It's in a back district—perhaps twenty-four hours to reach it on foot. But the first few hours after a fire is spotted may mean the difference between a small easily controlled fire and a giant conflagration that takes thousands of dollars and hundreds of man days to control.

Just the place for the 'chute-fighters. So a crew of three, always on call, pull on their jumping outfits, grab their parachutes and run to the plane, where their prepared kits are kept stored, and ready for instant use.

The fire has been observed by two lookouts and its position figured by triangulation, so that the pilot knows the exact location. The two-way radio in the plane enables him to keep in touch with the airport as well as with the 'chutists on the ground who will also be equipped with a tiny two-way set.

Average time to reach the site of a fire, chute to the ground and be on the fire line was one hour and forty-one minutes in a series of ten carefully timed experimental fire jumps—a reduction of many hours in the usual ground travel time. Forest Service figures indicate that ten men in one hour are worth seventy-five men ten hours later, so the quick action of the chute troopers far outweighs the greater initial cost of training and equipment.

In the air over the fire the plane circles a couple of time to examine the terrain, and a small test 'chute is dropped to determine wind drift.

The jumping suits are heavily padded canvas coveralls with pants overlapping the shirt and high upturned collars to prevent branches from entering the suit. Steel ribs, ankle braces, and a football helmet with steel mesh mask complete the outfit.

Jumps can be made over almost any terrain, for the suits are protection against limbs and hard landings and are zippered for easy egress under difficult conditions. A rope is carried by each jumper for lowering himself to the ground in case of a "featherbed" landing in treetops.

The 'chutes are built for easy control. Novice jumpers quickly learn to land within a fifty-foot circle. This is important, to permit jumping as near the fire as possible without danger of landing in it.

Once on the ground the jumpers can set up communication with the plane above to assure the pilot of their safe

landing and to give instructions for the dropping of supply and tool packs, attached to simple 'chutes of burlap and rope.

The miniature radio they use was developed especially for such purposes by the Portland, Oregon, radio laboratories of the Forest Service. It weighs only six pounds, is about the size of a loaf of bread, and is suitable for communication between plane and ground. The plane, with a stronger set, can signal the airport or Forest Service headquarters if more men or supplies are needed.

When the men below have gathered their packs and tools they investigate the



**Radio is a vital part of the parachutist's equipment. Here a six-pound set, developed especially for his use, is being checked**

fire. If they feel they can control it without assistance they flash the pilot who returns to his home base—perhaps returning later for a check. If they think they will only be able to hold the fire, the pilot is instructed to relay their estimate of assistance to headquarters. Then additional men and equipment will be dispatched to the scene.

From this point on the sky-fighters adopt usual methods of fire control. But since they are carefully trained men, in the best of condition and on the job

hours earlier than any others could have arrived, they usually manage to clean up a potentially bad fire in a short time.

One man runs ahead to blaze a fire trail around the flames, starting on the side where it is spreading most rapidly. His companions quickly and skillfully chop out a wide path free from trees and brush, with a narrow ground trench in the center dug down through the leaves and "duff" to mineral soil.

For a small, slowly burning fire the line is built right around the edge and usually manages to hold it there. But if the fire has a good start or has a strong wind behind it, the line is cut some distance from the edge of the blaze and the unburned area between the line and the fire cleared by "back-firing," creates a wide burned-over area that the flames cannot jump.

Supplies dropped in the equipment packs include all necessary firefighting tools, cooking utensils, first aid kit, food for three days and a sleeping bag—yet they weigh only thirty-two pounds.

Most useful firefighting tools are shovels, miners' head lamps for night work, and pulaskis. "Pulaskis" are versatile tools especially developed for fireline building. They combine the blade of an ax with the blade of a grubbing hoe, one side for tree chopping and the other for trench digging.

The food supply consists of non-perishable "stamped rations," so named from Alaskan gold-rush days. These rations have been developed by the Forest Service and are quite similar to the Army's concentrated food packs.

Speedy fire fighting by parachutists isn't a new development since the war began. The Forest Service has been interested in 'chute trooper possibilities for years—ever since Russia pioneered in mass parachuting about 1934. And preliminary experimentation looking toward 'chute firefighting has been going on since 1934. The first test jumps were made in 1939 under field conditions on the Chelan National Forest in Washington.

In 1940 more extensive experiments took place, and tentative conclusions were drawn for a rapid expansion of a force of aerial fire fighters. But it apparently took the war to overcome some objections to the initial cost and difficulty of training and equipping parachutists in any numbers.

The first testing season over a hundred men applied for the jobs, but only seven were chosen. They were selected for their experience, physical condition, and, later, on their adaptability to the strain of jumping. They were trained for from five to ten jumps before being released for actual fire duty.

It was found after the first few times that the men would be able to jump in

almost any terrain, because of their skill in handling the 'chutes and the protection of their padded suits. This discovery saved the costs and trouble of making maps showing "safe jumping territory" that the Forest Service originally thought would be necessary.

Because of the care and precautions taken in training and equipment only two injuries were suffered by this original squad throughout the fire season, and these were minor ones incurred in training jumps.

The training program for the 1943 fire season is really tough, guaranteed to get anyone in condition. One of the trainees in a recent letter describes it like this:

After a session of brisk calisthenics—"We run up an inclined plane ten feet long and about seven feet from the ground at the high end, jump off and grab a rope and hoist ourselves hand over hand up onto a platform about eight feet off the ground; flip off into a net; stagger through a line of tires, cross-legged; crawl through two barrels with the ends cut out; jump over another; go hand over hand on a line of parallel bars; run up another inclined plane onto a platform five feet from the



***Dropping into treetops in wild inaccessible country, the smoke jumpers have proved their worth. Not only are they saving critical timber and man-hours, but they are cutting down the cost of forest fire control***

ground; roll off and over, crawl through a culvert twelve feet long and just an inch larger than you are; and stagger up to the first aid station; or, if you are of sterner stuff, go through it again and again, until you drop.

"Next we get into our jumping suits, a hybrid football uniform, feather bed, tin coat and straight-jacket, equipped with leather corset, football helmet, and birdsnest face protector. Then comes the jumping harness. Stand like a good mule and you are soon harnessed. Then you *have* to stand like a good mule. Someone hooks a block and tackle onto your harness and hoists you up, and you fish out a rope and let yourself down. Then you get into a training ship, which is a wooden box about the size of a plane body, and practice jumping out. Any fool can jump out of an airplane, but a fool and his head are soon parted if he goes down with one end up and the 'chute yanks the other end up. Still in all your rigging, you climb a twenty foot tower, get hooked into another harness and jump off and a rope stops you just a foot or so from the ground. This continues daily for a week or so and then we step out of the planes."

Smoke jumpers, who must be the pick of experienced forest guards and fire hands as well as being able to stand the rigors of parachuting, are in greater demand than ever. But the manpower drain has taken many of the formerly available woodsmen.

However, conscientious objectors, who have been doing firefighting and forest

work with the Forest Service for a year or two, have volunteered in large numbers to fill the needed quota. Sixty of these were trained this year at Seely Lake, Montana, chosen, like other volunteers, for their physical fitness and fire line experience. After the training course they were split up into smaller groups and placed in strategic locations in roadless forest areas.

A striking instance of the savings effected by the speed of the smoke jumpers in controlling fires is indicated in the record of ten fires in the Bitterroot National Forest on one blazing summer day. Two fires in the back country were controlled by four parachutists at a total cost of \$320. Eight other fires at the same time under comparable conditions were controlled by crews walking from road-ends. These eight fires burned from 100 to 1900 acres each, with control costs varying from \$2,000 to \$17,000 each. Estimated saving on the parachutists' fires was \$20,000.

The total season cost of one crew in one region in 1940 was \$9,047. The estimated cost of control of the fires on which they were dispatched would have been \$32,270 if ground crews had been used. Thus, an approximate saving of \$23,000 was made. And this includes only control costs. No attempt was made to estimate how much was saved in natural resources in the early control of these fires.

Too, it is realized that cost per trained crew of jumpers will decrease as training

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***Like the paratrooper, the aerial fire fighter is finely trained. This year many conscientious objectors are found in his ranks***



# BEACHES IN THE DESERT



By GRACE KIRKPATRICK

TODAY our great rivers are being pressed to turn faster and faster the machines that shape the wings of war-planes and forge the armor of tanks. But behind the mammoth dams that give the rivers power, still waters rise. These man-made lakes, some of unbelievable size and depth, are creating beaches in the desert. And they are setting up recreational opportunities of unusual character and scope for the years of peace ahead.

Some of them, notably Lake Mead, created by Boulder Dam in the Nevada desert, were becoming established as desert playgrounds well before Pearl Harbor. Others, among them the as yet unnamed lake formed by the mighty Columbia River backing up behind Grand Coulee Dam, must await the dawn of peace before contributing in large measure to the pleasure of millions of Americans. But old or new, future peace on the sands of these beaches in the desert will help smooth out the hurts of conflict even as, in everlasting stillness of deep waters, harsh rocks, cruel rapids and the remains of pioneer forts and battlefields lie buried.

Prior to the war, Lake Mead was drawing more than a half million vacationists a year. And it was well worth traveling hundreds of miles to enjoy.

Extending 120 miles through Boulder Canyon past Mount Wilson, through Virgin and Iceberg Canyons, and other rockwalled gorges with high coloring and spectacular geological formations, it reaches into Grand Canyon itself.



*Big-mouth bass, from Boulder Dam's Lake Mead, shown above*

This type of inspiring scenery is mixed at Lake Mead with the thrill that comes from aquaplaning on desert waters or from hooking eight-pound big-mouth bass under a dry desert sun. In the midst of an arid region it provides 550 miles of shoreline for camping, boating and fishing—for the American fun of living.

The paths of Geronimo, Nachez and the Apache Kid are below San Carlos Lake which has come into being behind Coolidge Dam, astride the Gila River in Arizona. Named for old Fort San Carlos, which saw pioneer history as thrilling and exciting as any ever written in the conquest of land, the lake, which lures thousands of vacationists, is a fitting monument.

The vast body of water that now washes above the site of old Fort Colville is also a worthy memorial—a memorial of the romance that began the stirring story of the Pacific Northwest. As yet not officially named, but among the largest of the man-made lakes, this waterway is formed by the Columbia River backing up behind Grand Coulee dam.

Stretching northward 150 miles to connect with the Arrow Lakes of Canada, it covered as it rose, in addition to the remnants of Fort Colville, ten



towns and villages, hundreds of miles of highways and railways, numerous bridges, treacherous Hellgate Rapids and Kettle Falls, and traditional salmon-fishing grounds of the Indians. It brings into being an international waterway for commerce and pleasure.

A band of Mojave Indians were among the hundreds who flocked to the celebration that marked the completion of Parker Dam on the Colorado River.

Upon seeing the new lake behind the dam, the chief of the tribe exclaimed, "Havasu! Havasu!" The coffee-colored, silt-carrying waters of the Colorado were stilled to a clear blue lake and

*Havasu* is the Mojave word for blue. Since then, this new link in western waters is officially Havasu Lake.

In land-locked central Wyoming, the reservoir above Alcova Dam extends into lofty Fremont Canyon, named for General John C. Fremont, early explorer. This new waterway gave central Wyoming such a "sea-going" craze that the government, to meet the demand, developed recreational facilities. A new lake was there; it was Wyoming's, and Wyoming people wanted to fully enjoy it.

Down on the Rio Grande in New Mexico, the lake behind Elephant Butte



*The mammoth Grand Coulee Dam backs up the Columbia River to form a lake one hundred and fifty miles long—a vacationist's paradise*



*Aquaplaning on desert waters is but one of the attractions which lured a half million pleasure seekers to Lake Mead yearly prior to the war*



*The desert seas have been well stocked with fish—with this result*

Dam created an attraction second only to the famous Carlsbad Caverns. It is described as "a blue sea in the middle of a desert" and as "a wonderful spot to spend a weekend." Thousands from New Mexico and Texas go to Elephant Butte Reservoir to fish, camp, swim, boat and picnic along its 200 miles of shoreline. The Rio Grande project, just north of the Mexican border, was one of the first to be constructed by the Bureau of Reclamation, and is among the oldest of our "man-made" inland seas.

There are eighty in all, among them Stony Gorge Reservoir in California; Arrowrock in Idaho; Roosevelt, Bartlett, Horse Mesa, Mormon Flat and Stewart reservoirs forming a string of lakes on the Salt River project in Arizona; the Rye Patch in Nevada; Minatare and Pathfinder in Nebraska; and the waters of Owyhee in the canyons of Oregon and Idaho where cattle rustlers once made rendezvous. And United States cartographers are clearing off white space on their maps to add still other lakes to the visible assets of mankind. When Shasta Dam and the Central Valley project are complete in Cali-



fornia, they must cope with more new water.

These desert lakes are not created and made safe for pleasure and other purposes simply by permitting the rivers to back up behind the giant dams. Endless surveys and appraisals are called for in advance; much work goes into preparation of the lake bottoms.

Consider, for example, some of the problems facing the creators of the mighty lake behind Grand Coulee Dam. Many homes and towns were submerged, but the number of buildings saved by removal to new locations was great. A dramatic sample of this is found in a Pacific Northwest newspaper headline—"American Legion Holds Final Dance Before Its Hall is Taken to a New Town." At times, the government was advertising for sale from fifteen to twenty houses daily. In addition to this, placer mining operations had to be dealt with. A thousand Indian graves had to be moved.

While this great modern day exodus was in progress before the flood that was rising in the "continuous woods where rolls the Oregon," engineers, for a distance of eighty feet below the high water elevation, were stripping the banks clean, thus removing all danger for the landing of boats. In the next zone of forty feet, moving toward the lake bottom, everything was cleared down to not

more than six inches above the ground. Below that, all trees and brush were cleared to a distance of two feet above the ground. Greasewood and sagebrush were entirely removed as it was determined that it would roll along with the current and pile up around the dam.

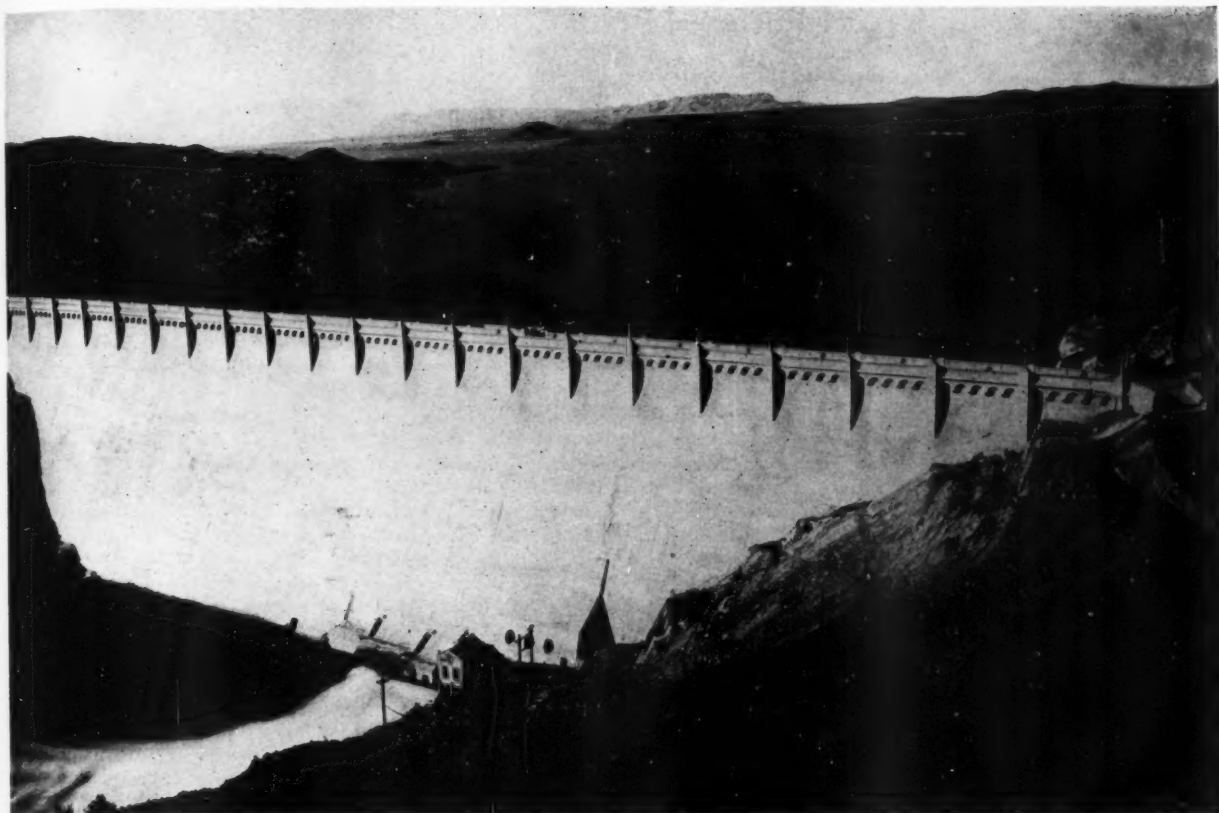
Grand Coulee, Mead, Elephant Butte, Alcova, Minatare, Havasu, Stony Gorge, Roosevelt—these names, among many others, the pleasure seeking public is coming to know. Eighty in all—and all created lakes, the majority of which offer or will offer recreational opportunities in varied and exciting forms. Prior to the war, many of these pleasure resorts and playgrounds were being recognized with increasing appreciation by the public. Who now can measure the future contribution of joy they will bring to our national life as the tumult and the fighting dies?

Some evening when the moon is bright, follow the Apache Trail into the shadows of Superstition Mountain. The trail will lead you to Roosevelt Lake and there you will see for yourself what these new lakes mean—what nature and man have produced in sheer beauty.

You will see that great reservoirs for irrigation, power and flood control can also be developed into beautiful lakes to be enjoyed by thousands of people. You will rejoice that in stark lands, these still waters, at peace, are increasing.



*The picturesque lighthouse (above) at Lake Minatare, created by the North Platte project in Nebraska, has become a landmark to thousands of land-locked recreationists*



*One of the oldest man-made inland seas, Elephant Butte Reservoir, is second in New Mexico only to Carlsbad Caverns as a tourist attraction. Below, a speed boat regatta*





# BRITAIN'S TWO POST-WAR FORESTRY PLANS

By P. L. BUTTRICK

FOR centuries Britain neglected her home forests and imported most of her timber requirements. Imports grew with the years as Albion's home-grown timber declined in volume and value. In the first years of the Twentieth Century Britons became slightly worried. To quote from the British Forestry Commission's latest report it was . . . "a period of leisurely inquiry supplemented occasionally by practical steps." These steps were short and when the U-boats first challenged Britannia's rule of the waves around 1916, desperate measures were taken to meet the war needs from home forests, supplemented by such imports as could be wriggled through the blockade. Otherwise World War I might have been lost for lack of pitprops to keep the coal mines operating. Pitprops have been one of the almost-lost horseshoe nails for Britain in two world wars.

In 1916 Englishmen said "never again." A Parliamentary Committee under the chairmanship of F. D. Acland drafted a sort of Magna Carta for British home forestry. Its scope is indicated by the following extracts from the Committee report: "In order to render the United Kingdom independent of imported timber for three years in an emergency, it is necessary, while making due allowance for an improved yield from existing woods, to afforest 1,770,000 acres. Taking eighty years as the average rotation, we advise that two-thirds of the whole should be planted in the first forty years. . . . We estimate the cost for the first ten years at £3,425,000 (approximately \$16,000,000). It may be necessary to invest £15,000,000 (approximately \$72,000,000) altogether in this enterprise during the first forty years. After that time the scheme should be self-supporting. . . . The whole sum involved is less than half the direct loss incurred during the years 1915 and 1916 through dependence on imported timber."

This program required: (1) purchasing large areas, mostly of low grade grazing land, and its afforestation by planting; (2) the modernization of for-

**There is much talk today about post-war planning. There was in 1917. Many plans were made—some of which reached the action stage and demonstrated their strength and weakness during the inter-war period. In this article, the author tells how British forestry plans have evolved as the result of the impact of two world wars. The first post-war plan was inadequate in scope, but by no means useless in the present war. The new plan, if carried out, will, among other things, give Britain a larger forest area than she has had for centuries.—Editor.**

est practices on the old royal forests, long treated largely as recreation areas and grazing land; and (3) assistance to private woodland owners.

Parliament established a Forestry Commission and work began in 1919. Accomplishments measured in acres purchased and planted in the two decades of the "long armistice" compared with the original goals are: *Land acquisition*—projected 745,000, purchased 654,987; *planting*—projected 493,000, planted 368,787. The gap between the "acquired" and the "planted" figures is in part accounted for by the facts that some of the "acquired" land was already forested and some mountaintop and swamps had to be purchased in order also to get forest or plantable land intermingled with it. Nevertheless, planting lagged behind acquisition. Failure to keep to schedule was due largely to decreases in appropriations. Not a great deal seems to have been expected of private woodland owners in the Acland program. Although provision for "grants in aid" and technical assistance were made, apparently not much was accomplished.

More or less as by-products of the work a number of "national forest parks" have been established in connection with the reforestation areas, chiefly in those where there was much mountain land unsuited to forest growth. The Commission says: "It is almost a truism that in these small islands it is necessary to reconcile the claims of amenity and economic utilization; if they are kept in watertight compartments there will not be enough land to go round." The work opportunities afforded by the program helped to relieve the stresses of the immediate post-war period much as the CCC program did in the early thirties in the United States.

Later the program turned out to be a means of rehabilitating many "blighted areas" of rural Britain.

Most of the planting done has been with fast growing conifers. Conifers were scarce in the original forests of the British Isles but they are now far more use-

ful for most constructional and industrial purposes than hardwoods. The Commission has taken the pick of the world's trees suitable for the British climate, which incidentally is excellent for tree growth. Among the species found most suited are: Scots pine (the only native timber-producing conifer in the British Isles), Corsican pine, Norway spruce, Sitka spruce, Douglas fir and Japanese larch.

Obviously the Acland program, even had it been kept to schedule, could not have grown a three—let alone a four or five year timber supply—in two decades. Nevertheless, pitprops cut from the earlier plantation are being used in British coal mines today. The British government is not telling Hitler how many. But it is no military secret that Britain is again scraping the bottom of a depleted home-grown timber barrel and supplementing it with precarious imports from Canada, the United States and Russia. To meet wartime needs the timber industry, both imports and home-grown, has been put under stringent government regulation. The Timber Production Department of the Ministry of Supply through a licensing system controls all felling operations with the intent of getting as large an immediate supply of domestic timber as possible. Every land owner must sell all his commercial timber to the government at a fixed unit price. This system is at present supplying the barest essential needs. Within a few years, however, it seems inevitable that Britain will have again to depend entirely on imports, for the home-grown supply will probably be exhausted soon, if the war continues much longer.

The Forestry Commission has continued its activities on a reduced scale. (Turn to page 459)

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# Editorial

## The Wallgren Bill

SENATOR Wallgren's bill (see page 452) for federal regulation of private forests "and for other purposes" covers much ground other than the highly involved and debatable portions dealing with regulation. Quoting from its title, it is a bill "to effectuate the recommendations of the Joint Congressional Committee on Forestry" which were submitted to the Congress in the Bankhead Report of 1941 and embodied recommendations considered necessary by the committee "for the establishment of a real forest economy in this country." (See pages 182-186, April 1941, *AMERICAN FORESTS*.) The delusion here, as all familiar with the Bankhead Report know, is that the Congressional Committee never recommended any such drastic form of regulation as proposed by the Wallgren bill—S. 1330.

As a whole, the bill contains many features regarding which there will be general agreement. They form the tail of a kite, however, which casts its shadow of strong-armed federal control over all privately owned forest lands in the United States. Doubtless America has reached the point when it must begin to put some restraint on the actions of private forest owners who fail to treat their forests as a continuing resource. The question has become not, shall the public exercise needed controls but rather, shall these controls be by federal or state agencies? Developments in the state field were fully described by P. L. Buttrick in his article "Progress in Public Regulation of Private Forests" in our August issue. This progress is tentative but by no means negligible. It should lead to further constructive measures.

It is questionable whether many advocates of federal regulation will care to endorse the extreme form of control proposed in the Wallgren bill. With minor exceptions the bill gives the Secretary of Agriculture full power to regulate cutting on all private forests from which forest products are removed for commercial purposes. It ignores state lines and state forestry departments complete-

ly and steps into the field of mandatory fire, insect and disease control, a field hitherto considered basically a state matter, but in which federal financial and technical assistance has been invaluable and in which more of both is needed. It is difficult to see where there would be much place for strong and independent state forestry departments if the bill should pass. The means of enforcement would be through the federal power to control interstate commerce. Only such products as are cut according to federal "rules of forest practice" could be shipped and certificates to this effect from the Secretary of Agriculture or his agents would be required.

Any drastic regulatory law can make operations expensive for forest owners, and the regulatory authorities should be bound to aid them to keep cost of operations within reason, otherwise prices of forest products must rise to heights which will be injurious to consumers. One of the costs of production in forestry is land taxes. These are assessed by the states. The bill does not propose to regulate the states in assessment of taxes on forest land. Therefore, both forest owners and consumers of forest products could be placed in awkward positions without some form of tax control if the full powers inherent in the bill should be arbitrarily invoked.

It seems highly doubtful that the regulatory features of this bill will be passed as they stand. It is even problematical whether any forest regulatory bill can pass with the war on and Congress in its present mood. Nevertheless, the Wallgren bill cannot be lightly dismissed because it undoubtedly is the forerunner of other drastic and unworkable legislation that will be pressed on Congress when the war is over. If, as we think, the states are the proper avenues through which to work out successfully the problem of localized forest management by private owners, it behooves all holding this view to work actively to that end. The more forest owners handle their

lands constructively the less they need fear regulatory measures.

With possibly two exceptions, there is nothing new or radical in the other titles to the bill. Some of the provisions are urgently needed; others seem desirable in the long-range view. It is to be hoped that they will not be confused with the regulatory features but given public and congressional consideration on their individual merits. They are mostly amendments to existing laws designed to liberalize the use of federal funds for forestry activities or to authorize larger expenditures for these purposes.

Other than this, only Titles V, IX, and X seem to call for special comment. Title V proposes to set up a federal system of forest insurance against fire and tornadoes. Few question the need of such insurance. Private industry seems unable or unwilling to enter the field. It would seem, therefore, a desirable and legitimate field of public activity. There is a precedent in federal crop insurance. Whether the scheme proposed is the best possible is a matter for those who are experts in both forestry and insurance.

Title IX proposes a new basis for federal payments in lieu of taxes to states where there are national forests. Apparently, there is need for change in the present one. There are a number of bills before Congress dealing with this. (See page 410, August 1943, *AMERICAN FORESTS*.) Until the matter is more carefully studied, it is well not to advocate or condemn any one bill.

Title X proposes quite material additions to the national forests by purchase and proposes purchase under conditions and by methods not possible under existing law. Few question the desirability of further national forest acquisition, although there is divergence of opinion as to how extensive the additions should be. There will doubtless also be much divergence of view regarding the soundness of the proposed new methods of financing purchases by long-term loans at low interest rates.

# THE RETURN OF LONG POND

By ROBERT S. MONAHAN



*Recreated Long Pond, in the White Mountain National Forest of New Hampshire, as it appears today*

"THIS may be something to look at some day, but it sure is nature in the raw now." Such was the reaction of American Forestry Association members who journeyed to Long Pond just ten years ago during the 1933 annual meeting at Franconia, New Hampshire.

They listened attentively while the late Robert E. Fechner, CCC director, and Regional Forester Joseph C. Kircher of the U. S. Forest Service, and Forest Supervisor James E. Scott prophesied a rosy future for Long Pond. But they carried away the picture of a rough mountain meadow studded with niggerheads and fringed with rank alder. Lake bottoms without covering water are not things of beauty.

Now, in the tenth year since its recreation, the story of Long Pond can be told. Its recent history has vindicated the conviction of its proponents and silenced forever its few skeptics.

There are at least fifteen other "Long Ponds" in New Hampshire, but when Granite State fishermen are discussing their luck, they generally refer to this small body of water under the sunrise shadow of Mount Moosilauke, in the southwestern corner of the White Mountain National Forest.

The history of Long Pond falls naturally into four chapters: the Ice Age, the lumbermen's era, the beaver regime, and the Civilian Conservation Corps millenium. When the last continental ice sheet retreated slowly to the northward variously estimated at 10,000 to



*The new Long Pond, like the original, is a fisherman's paradise*

25,000 years ago, it left a vast disrupted drainage system of countless lakes and swamps. Long Pond was one of those odd depressions carved from a dividing ridge by the remorseless glaciation of the Ice Age. As tropical heat gradually conquered the Arctic cold and drove back the front of the ice cap whence it came, the melting ice revealed this small basin on the height-of-land between north and south-flowing streams since named Whitcher Brook and Jeffers Brook. In common with other lakes of northern New England, Long Pond was a heritage of this fascinating period in the continent's evolution.

For centuries this upland swamp must have been a popular watering place for deer of the Benton Range and perhaps a favorite fishing rendezvous for the Penacook Indians of the middle Connecticut Valley.

Water-wise loggers late in the nineteenth century were jubilant when they found this ideal reservoir for river driving. A splash dam across its outlet backed up enough water to develop a "head" for floating the thousands of cords of pulpwood piled on the shallow, ice-crusted channel of Whitcher Brook. The four-foot bolts of spruce and balsam

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fir were given a rough send-off down to the wild Ammonoosuc and eventually to booms above the hungry paper mills along the Connecticut. When the merchantable pulpwood was cut out, the log dam gradually rotted and Long Pond reverted to an alder swamp.

In 1923 Philip W. Ayres, a former director of The American Forestry Association, obtained from the State of Minnesota two pairs of beaver, descendants of two pairs given Minnesota by the Canadian Government about 1914. The beaver were transported from Lake Itasca to the Lost River Reservation owned by the Society for the Protection of New Hampshire Forests.

Mr. Ayres, who for thirty-four years was forester of the Society, hoped they would settle in nearby Beaver Meadows, so-named for a long-deceased beaver colony, and there provide a roadside demonstration of natural history to the throngs who visited the Lost River Reservation in Kinsman Notch. But the beaver, either because of insufficient aspen or the exposure to curious tourists, thought otherwise. They spent one winter in Beaver Meadows, but in the spring of 1924 they moved down the wild Ammonoosuc about three miles and set up housekeeping in the flowage of an old splash dam which they repaired.

But this location for obscure reasons did not meet their fancy. The following spring they migrated another five miles down the wild Ammonoosuc and then ventured up a tributary stream, Whitcher Brook, about three miles to its headwaters at Long Pond. Here the industrious beaver immediately repaired the rotting splash dam which had formed a barrier about sixty feet long and ten feet high. It flooded an area about a mile long but not much over one-eighth of a mile wide. The beaver prospered and multiplied for two years. It was an open secret among north country fishermen that the new beaver dam made an ideal trout pond.

Those were happy years at Long Pond. The beaver thrived in their mountain retreat. The brook trout found

(Turn to page 448)

*Upper—Visiting members of The American Forestry Association view the beginning of reconstruction work by CCC crews ten years ago*

*Middle—Four years later, in 1937, concrete and earth had replaced the old timber dam and water was spreading over 125 acres*

*Lower—Today, the "swamp," as the CCC boys called it, is completely restored, a favorite objective for the angler and vacationist*



# YOUR SHADE TREES:



## "Why Don't My Trees Flower?"

By L. E. MANNING

FLOWERING trees and shrubs are frequently planted with great expectations. Beautiful pictures are studied and gloat-ed over in anticipation and every bud as it opens after planting is watched hopefully—but no flowers! The next step is, too often, heavy feeding with the best fertilizer and frequent watering, with perhaps some violent pruning of branches. The following year still no flowers, but a plentiful crop of large leaves and a vigorous growth. The amateur is happy about the growth and becomes resigned to waiting for the blooms. He again fertilizes heavily. The years pass and no blooms ever come, or, at the best, a few flowers—not half so much as the least of the woody native beauties shows, growing in nearby wasteland.

He gets many suggestions from other amateurs. One may be: prune the plant heavily—this is a common suggestion for fruit trees; another, do not fertilize for a year or two; still again, prune the roots severely, or even transplant the tree completely, and still another: dig a drainage pit close up under the tree. If he is energetic, he may try all these things. Some do good, some make matters worse. If he is lazy, he gives up and does nothing at all for a few years, whereupon the tree very likely commences to flower vigorously and continues so for the rest of his life!

Is the answer then that trees should be merely let alone? Not at all. Many a tree keeps in vigorous leaf without flowering for decades. There is a simple explanation which lets light in upon the whole subject and permits any careful

reader thereafter to diagnose the problems of any flowering plant, woody or herbaceous, and suggest to himself reasonable treatments which can and positively will bring the plant into flowering.

The first step is to fix firmly in the mind the fact that a bud before it opens may turn out to be a leaf-bud or a flower-bud. The problem is merely to weight the scales of decision in favor of flower-buds. When? Almost a full year before the bud opens, the branch sets apart a few cells to form next spring's buds and at that time differentiates them into flower and leaf types. How can you help it decide this matter? By increasing the amount of food-flow from the leaves to the branch, at the same time decreasing the amount of food-flow from the roots into the branch. Merely to make a cut with a sharp knife all around the branch below the bud will do this. Some orchardists practice this, taking care always to make a cut only and not a notch, for the thin cut will close up almost entirely as the blade leaves it, while a notch would girdle and kill the branch. This might be the most direct method, but is not permanent nor satisfactory. A little more research into the causes of bud differentiation is indicated. If the leaf is sending plenty of carbohydrates back to the branches, and the roots are sending only a normal or perhaps slightly less than normal supply of nitrogenous salts up the trunk to the branches, then most of the buds on that branch will, next year, be flower-buds. On the other hand, if the nitrogen (root product) is plentiful, and carbohydrates (leaf product) in poor supply, the buds will all be

leaf-buds. Thus, anything which helps the leaf manufacture its form of food helps bring on flowering, and, if the trees be in vigorous leaf growth—anything which lessens the the root activity will also help bring on flowering. If leaves are helped and roots hindered, both at the same time, the effect is so powerful that flowering is *certain* to follow. We will consider the few things which can easily be done to help leaves and hinder roots.

The leaf depends on sunshine for its power supply. To make carbohydrates each leaf needs plenty of sun. If shade can be removed, or plant shifted to a sunnier position, then leaf action is obviously increased. But not so obvious is the case of a thick, bushy plant where the outside leaves get plenty of light, but the inside leaves are darkened by the very luxuriance of the outside layer. Here one can prune away deep gaps in the bush, as by removing every second branch to the base—leaving a space between branches through which light can fully penetrate. This sort of pruning increases the total area of leaves affected by light, even though some leaves have been removed to do it. In a normal soil, nothing else can be done to help leaves.

The roots have several controls simple enough for the amateur to try. First and most obvious is to stop fertilizing. Then in a few years there will be less nitrogenous food ascending from the roots. But a few years is a long while, sometimes, and such action is not very positive at best. One can hasten things by reducing the water supply in the soil at the same time, for roots cannot use fertilizer except as it becomes dissolved in water. So, to stop the use of the hose, except in drought emergencies, will help—or better yet, to provide a drainage system by a ditch or a well of rocks close under the roots, thus draining rain water off almost as soon as it falls. These measures are all permanent and will in

the end achieve their purpose, but for a quick decision *now*—this year—prune the roots with a sharp spade as if one were getting ready to transplant the tree. This will usually result, if it is done in spring or very early summer, in a handsome show of bloom the following year. If accompanied by the other measures, the blooming habit will remain permanently.

So far we have discussed only the one case, where leaves and growth were satisfactory or even extraordinary but no flowers came. Such a condition is common, and its complete cure is contained in the above two paragraphs, but it is well to note other possible conditions. Suppose that with plenty of nitrogen, there lacked almost entirely any carbohydrates, and this condition could exist in dense shade, or at the north side of a building in some kinds of plants. An aggravated case of this carbohydrate starvation could and often does result in the death of the plant—slowly, without any symptoms but increasingly poor growth. If the shade cannot be removed then beware of too much fertilizer or moisture. On poor, well-drained soil a dwarfed but nearly normal shady life will be sustained: A little pruning of overhead branches, if under trees, or moving as far away from the house as possible, if on the north side of a building, will help further. Some shade-loving plants will do well in such cases, but sun-loving sorts will never be happy.

Consider further the case on the opposite side of the picture. Suppose a plant is in full sun, but in soil so lacking in food, and so well drained, that almost no nitrogen is available at all. The result here is nitrogen starvation and the growth is poor and weak and death will result. Here fertilizing and watering are needed, and if in rocky soil where it is not practical to provide sufficient food then *shade*—light shade—will bring on some sort of balance so that the plant will bloom well, even though partly starved.

So far as shade trees are concerned, the flowering kinds include the dogwoods, Oriental cherries (fruitless) and Golden-chain, as about the showiest—with old fashioned sorts like horsechestnut and catalpa still useful. Of these the dogwood does best in shade, and if planted in such a situation a lush leaf growth results but few blooms. Drainage and no fertilizer will vastly lessen the growth, and also induce blooming even in these circumstances. Better yet, get them into sunshine and watch that not too much food is available in the soil. I have seen a young dogwood go ten years without flowers; then, after a heavy root-pruning to within fifteen inches of the trunk all around, start the following spring into a snowdrift of flowers.

Try it out in your fruit orchard,—in your perennial bed,—in your shrub border. It works everywhere. First look at the leaf growth and decide if it is ample and vigorous. If so, help the leaves and discourage the roots until you get flowers. If the leaf growth is weak, then fertilize and water lightly and, if in shade, try to get some sunlight in or, if dense and bushy, try to prune for air space, so light can reach the interior. Never fertilize heavily, and never prune violently if you are interested in flowers. Obviously heavy pruning removes most of the leaves that alone can produce the very carbohydrates needed for flower-bud differentiation. And of course, flowers mean fruit—if you happen to be thinking about fruit trees, as who is not

in these days of Victory Gardens? Other things being equal, the tree with the most flowers bears the most fruit. Here in brief are the points summarized:

Help the leaves by:

1. More sunshine.
  2. Pruning openings inside the tree.
- Discourage roots by:
1. Less food in the earth.
  2. Less water to dissolve it.
  3. Pruning the roots.

And remember, the leaves need help when they are *too luxuriant*. The plant wants to flower, too, and when it cannot produce many vigorous leaves, hoping to get enough of them to do the job. If there are too few leaves, and still no flowers, the chances are the *roots* need food. Give it to them.

## THE QUERY CORNER

QUESTION: I propose to make an experimental seed bed planting of several thousand baldcypress seeds locally gathered. Reading that the tree seems to do better on dry land than in a swamp, I would like whatever information I can get about propagating baldcypress.

Perhaps you can give me specific information. If so, I shall appreciate it. —R. C. D., Kalamazoo, Michigan.

ANSWER: The recommended practice is to stratify the seed for thirty days at 32 to 50 degrees Fahrenheit, and to sow in spring only.

In nature, the plant is confined to a belt of comparatively mild winters. Stratification consists of a layer of seed and a layer of sand alternately, the whole put in a stout wooden box, or wire-fine screen to keep away mice, and buried, as stratification must be slightly moist. In Michigan the whole box could be put in a cool cellar and packed with moss to keep in dampness and still maintain high non-freezing temperature.

QUESTION: I would like to have some information about planting lawn seed and would like very much to know just when is the best time to do this work.

Also, I have a problem because rain washes grooves into my front lawn and the grass will not grow. My home is in the mountains at a height of 2400 feet above sea level. From the highway the ground slopes down about twenty degrees towards the house and then rises up again twenty degrees and this leaves a low point at a certain distance to carry the water away. How can I prevent the rain from washing these grooves into

my lawn?—A. C., Uniontown, Pennsylvania.

ANSWER: Lawn seed should only be planted in August in your climate. Soil prepared next spring, cover crop of soy beans sown and turned under in late July, all weeds kept down all summer. Then prepare and sow your seed in August.

To prevent washing of a twenty degree slope it is only necessary as a rule to prevent water from coming from above. The slope itself will not wash with what rain falls direct, but by the wash from the road above. Keep this off by a ditch at the top leading away or to a storm drain.

QUESTION: I have a request for several nurseries which grow willows for basket making purposes. They call specifically for the white (*Salix viminalis* L.) and red (*S. chermesina*) willows. I find that the U. S. D. A. prefers the American green willow (*S. amygdalina* L.) to either the white or red. Could you include all three willows when you give me reference to the nurseries? Could you also verify the statement that green willow is superior to either the red or white? I should prefer if possible you recommend nurserymen located near Delaware.—L. R. D., Newark, Delaware.

ANSWER: Sorry to be of so little help, but the nursery trade does not go in much for these—probably because, for the most part, it is not so much a crop but a business of collecting available native material.

Some of the Tennessee growers have some *Salix viminalis*, the only one of the three kinds you mention that I know to be available.



# Tree Trails . . .

## Across America in Search of the Rare and Unusual

SEVERAL years ago, E. V. Wilcox of Chevy Chase, Maryland, inspired by a visit to the major sequoia groves of California, became interested in learning how these great trees are adapting themselves to cultivation outside their natural habitat.

"By consulting a number of excellent publications on the sequoia," he writes, "I was reminded that far back in the Tertiary Age redwoods, *Sequoia sempervirens*, grew pretty much all over Europe, Asia and North America, that petrified specimens had been found in a number of our states and in Alaska. I also found that artificially planted giant sequoias, *Sequoia gigantea*, are growing in the Black Forest of Germany, in England and in several localities in Asia.

"According to such authorities as R.

W. Chaney, George B. Sudworth and J. C. Shirley, the Sierra sequoia, *gigantea*, seldom lives beyond twelve or fifteen years when planted in our eastern states, although one near Aurora, New York, has passed its eightieth birthday. Several years ago I stumbled upon a splendid petrified sequoia stump about twelve feet in diameter near Amethyst Creek in Yellowstone National Park.

"Out in Oregon, however, thanks to Miss Ethel B. Rundall of Portland, teacher and nature lover, I had the pleasure of viewing a dozen or more stately and perfect specimens of *gigantea* growing in door yards and on the campus of Pacific University at Forest Grove, less than forty miles southwest of Portland. These trees were about seventy-five feet high and six or seven feet in diameter.

"From Dr. H. L. Bates, dean emeritus of Pacific University, Miss Rundall has collected considerable detail of the history of these trees. About the year 1870, according to Dean Bates' reckoning, John B. Porter, who lived on a farm near Forest Grove, returned from a short visit to California, bringing with him five dollars' worth of seed from the *gigantea*. These he planted on his farm, and from the resulting seedlings specimens were planted in various locations in Washington County. Except in occasional winters of severe temperatures, the young trees thrived.

"In 1918, Dr. Bates checked on the number of sequoias remaining in the county and found ninety-one. Since then a few have been cut down. On the Porter farm from which the seedlings



A tree of great beauty and majesty is this champion Rio Grande cottonwood near Moab, Utah

came, there is a beautiful avenue of thirty-eight trees. Of the eight originally planted in the court house yard at Hillsboro, five remain. Twenty-two are still standing in a church yard at Verboort; twenty are growing in the town of Forest Grove.

"Of the three growing on the campus of Pacific University, one is considered by Dr. Bates as the most beautiful specimen of sequoia in the county. Because of its isolated location, it has grown in a pyramid with its lower branches resting on the ground.

"The striking significance of this colony of *Sequoia gigantea* in Washington County, Oregon, is the evident ease with which they may be reared under favorable conditions. In their native habitat at an elevation of around 7,000 feet, the yearly range of temperature lies between twelve and a hundred degrees Fahrenheit, and the annual precipitation between eighteen and sixty inches. Weather records for Portland, thirty-eight miles from Forest Grove, show a temperature as low as two degrees on only one day since 1874, and as high as 100 degrees on only seven days. In sixty years of Portland weather the driest has had twenty-six inches of rainfall, the wettest sixty-seven inches.

"Ninety-one giant sequoias from a handful of seed! The Washington County commissioners should erect a fitting monument to the memory of John R. Porter for decorating his community with these superbly unique trees, and for demonstrating anew that the giant sequoia is quite cosmopolitan in its tastes and is not limited to the Sierra of California. There are doubtless hundreds of other localities of similar climate where the *gigantea* would take root and prosper.

"The redwood, *sempervirens*, is at home, of course, at low altitudes. But *gigantea* is rare below 5,000 feet elevation. How, then, can this tree feel happy at sea level and why does it not of itself spread downward from its mountain home to the coast? Perhaps the answer is found in the arid summer climate of the lower western slopes of the foothills in the Sierra. This, more than likely, retards or prevents growth of the young seedlings.

"Ezra Meeker, the peripatetic, ox-cart philosopher, so I am told, is credited with having planted the lone giant sequoia in the town of St. Helens, twenty-seven miles northwest of Portland. Perhaps there are other trees still to be reported—in Oregon or elsewhere. No one, so far as I could learn, has tried to determine whether the cones borne on the Washington County sequoias produce fertile seeds. But if succeeding generations think as highly of these giants, now in their teens, as do their



Six black oaks make up this unique "tree" on Long Island

present owners, Forest Grove may expect a rush of tourists 3,000 years from now."

Tourists have already discovered another grand old tree of the West, a Rio Grande cottonwood, *Populus wislizeni*. A giant specimen, perhaps the largest in the nation, stands in the middle of a road near the city limits of Moab, Utah. Reported by Owen DeSpain, a United States forest ranger, the tree is twenty five feet, two inches in circumference four and a half feet above the ground. It is seventy-two feet high and has a limb spread of 108 feet. The Utah road-builders, impressed by the size and beauty of the spreading giant, preserved it for the traveler fortunate enough to stop awhile in its bountiful shade.

Far removed from Utah and cottonwood country is another tree of unusual interest—rather, an even half dozen of them grown together. This unique

group of black oaks, *Quercus velutina*, stands near the north shore of Long Island, New York, and was reported and photographed (see above) by Gordon K. Smith of New York.

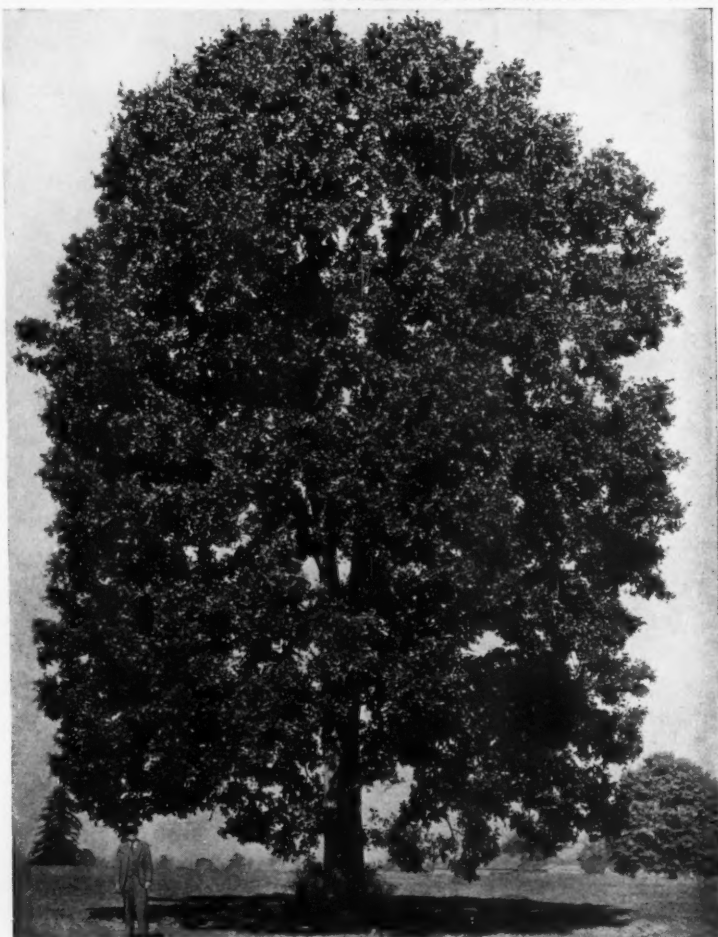
"The unusual feature of this 'tree' is that it seems to be six separate trees growing from a common base," writes Mr. Smith. "It is within four inches of being twenty feet in circumference at two and a half feet from the ground. Perhaps the separate acorns were buried by a squirrel and forgotten."

Perhaps—or it may be the result of sprouting from the stump of an original tree or of seed falling into pockets around the base of the parent trunk. These pockets are sometimes caused by depressions made by animals, such as the hooves of cattle and horses, and the action of water. Still, a squirrel is a prodigious little planter in the fall when acorns are ripe.

# OREGON WHITE OAK

*Quercus garryana*, Douglas

By G. H. COLLINGWOOD



velopment with a height of seventy-five to ninety feet and diameters of four or five feet. On mountain sides it is smaller, and southward in the Siskiyou Mountains, and in exposed situations along the coast, it is considerably reduced in size.

From the Santa Cruz Mountains of California, its range extends northward through western California, western Oregon, and western Washington to the shores of Puget Sound whence it follows the islands to Vancouver Island. On Vancouver it is found on the southeastern tip, and also in two small isolated stands, the farthest of which is nearly the most northern outpost of oak on this continent, being slightly outdistanced by bur oak in the southern part of Manitoba. There is also a small stand of Oregon white oak in southwestern British Columbia.

Often a gnarled, picturesque tree, it grows in a variety of soils from deep moist humus to dry, gravelly and rocky sites in the zone between grassland and forest, or on southwest slopes

OREGON white oak, or Garry oak, as it is also known, was named by the botanical explorer Robert Douglas in honor of Nicholas Garry, secretary of the Hudson Bay Company, because of the aid rendered by the latter to botanists studying the flora of the Northwest. It is a tree of dark green foliage and rugged appearance, which sometimes attains massive proportions.

In lowlands from the Willamette Valley of Oregon northward to Puget Sound this oak reaches its best de-

Upper: Reaching heights of sixty to one hundred feet, Oregon white oak develops a broadly rounded crown of dark shiny foliage

Right: Old trees are gnarled, and when growing in the open the trunk is short, and the lower branches drooping





that are excessively hot and dry in summer. It is rarely found above three thousand feet elevation. Occurring occasionally in pure stands, it is generally in mixture with Douglas fir, Kellogg oak, ponderosa pine, Oregon ash and madrona. In the bottomlands where young stands of Douglas fir crowd close about its base, it is usually tall and without lower limbs.

The light gray-brown bark is broken by shallow narrow grooves, to form square scaly plates. The young twigs are hairy, later becoming smooth and bright reddish brown, while red fuzz covers the long pointed buds. Resembling those of *Q. alba*, the leaves grow alternately, four to six inches long, and two to five inches wide, with seven to nine large rounded lobes, whose thickened margins curl under. Smooth, shiny, and dark green above, they are paler and hairy with conspicuous veins beneath. To cope with summer drought conditions, the upper surface is tough and leathery, and the under surface hairy to retain moisture.

The staminate flowers are pendent catkins that occur in clusters, and the pistillate ones are erect blooms occurring solitary or in pairs. Oregon white oak is a prolific seeder about every other year, but the rate



Bark is light grayish brown, and on old trunks is cracked and broken into fairly even plates and ridges

of germination of acorns is usually very low and therefore seedling trees are scarce. Acorns are one to one and a half inches long and about half as broad. The shallow cups are hairy, covered with thin, loose, pointed scales, and usually stemless.

This oak is the only timber oak in the coast country of the Northwest. Pale yellowish brown in color, the wood is hard, fine-grained, tough, strong and durable. It is used in furniture, ship construction, buildings, agricultural implements, vehicles, barrels, cabinet-work, fuel and interior finish. Insulator pins for electric lines, saddle trees, stirrups, and baskets are some of its more unusual uses. In 1939, the sawmill output of Oregon white oak for the two northwestern states was only 94,000 board feet.

A long-lived, slow-growing tree, it attains two hundred and fifty or three hundred and fifty years. In the northern part of its range, winters are exceedingly wet and favorable, but its growth and reproduction are limited by the excessive drought of summers.

Enemies are a leaf mold and a root rot but neither is serious. A twig girdler causes the loss of many small branches; and about once in seven years an epidemic of leaf galls produced by a small wasp reduces the vitality of many trees. The parasite mistletoe is proving an enemy of increasing destructiveness.

The approximate stand of Oregon white oak of sawtimber size is 88,300,000,000 board feet in Oregon and Washington, while the annual cut for all purposes is about 246,000 board feet.



Leaves, growing alternately along the twigs, are shiny above and hairy beneath, while the acorns, which ripen in one season, are sweet and eaten by wildlife



Natural range of Oregon White Oak

## The Return of Long Pond

(From page 441)

abundant natural feed in the dead water. And the fishermen, handicapped by the long uphill tramp from the nearest road and the rank growth of inundated alders, fared well but not too well. Then came the 1927 fall flood vividly remembered by the inhabitants of the White and Green Mountains. Man-made dams and bridges collapsed before the rush of the torrential rain which cascaded down the frozen mountain slopes. The beaver dam at Long Pond failed, too, but it was not a headline casualty.

The doughty beaver, realizing it was too late in the season to replace the dam, retreated downstream about half a mile. There the stream narrowed between two high banks where the beaver were able to build another but smaller dam before winter. No doubt they planned to rebuild their main dam the next spring. But in their cramped quarters they were easy prey for poachers and when spring came the beaver regime at Long Pond had ended.

Only gaunt snags killed by periodic inundation marked the happy fishing grounds, but in the valleys men remembered. How Long Pond could be recreated became a popular topic among north country sportsmen and the U. S. Forest Service personnel. The depression-hit local folks still thought enough of their fishing to contribute \$650 for materials but the Forest Service, hampered by economy budgets, could do little but plan and hope.

On April 1, 1933, the day after President Roosevelt signed the CCC bill, Camp Wildwood was formally recommended by the Service as one of the four initial White Mountain National Forest camps. Long Pond would be its

first big job. On April 20 the forest supervisor urged that Camp Wildwood be given first priority because of its accessibility, despite the mud season and the close proximity of justified projects.

The historical document "CCC Movement Orders No. 1" of May 5 authorized the immediate transfer of a construction company from Camp Devens to Wildwood. On May 19 the 101st Company established a tent camp and three days later started work at Long Pond, seven weeks after the bill was signed.

It was a long productive summer. The old timber dam, surprisingly sound under water, was completely removed. The excavation continued until about one thousand cubic yards of earth, rock, and buried logs were stripped from bedrock. The outlet was plugged with a sixty-foot concrete spillway, flanked by concrete core walls extending from the headwall forty feet in one direction and 258 feet in the other. Two thousand cubic yards of earth were dumped around the core walls, and the bank was carefully ripped with stone to protect it from storm-tossed waves and derelict ice sheets.

In that first summer of the CCC modern equipment was at a premium. More than one World War I Liberty truck ran its last productive mile on the long pull gaining 1,000 feet in altitude from camp to job. But hand tools and enrollees were more numerous. By October 20 the last of the 306 cubic yards of concrete had been mixed and placed.

Elsewhere, in the flowage or "the swamp," as the enrollees had good reason to call it, all stubs, brush, and live trees at a point slightly above the high water line were cut and piled. Long

Pond would not be rimmed with a forlorn mass of "dri-ki," so characteristic of many artificial lakes in the back country. The toll in the edges of axes wielded by urban enrollees was terrific. Classes in woodmanship failed to decrease the mortality and New Hampshire granite remained king. However, threatening to relegate careless axmen to brush-carrying soon converted the city lads into expert woodsmen. No serious accident occurred either in the camp or on the dam during the entire job.

During the short winter days more than 3,000 large piles of wood and brush were burned. Smoke hung low in nearby valleys. By January 20, 1934, the last pile was reduced to ashes. All was quiet in the swamp while enrollees were busy elsewhere bucking fuelwood and girdling wolf trees until March 5 when the dam gate was closed. By March 31, the first anniversary of the signing of the CCC bill, spring snow water was spreading over the 125 acres which today is Long Pond.

Early summer visitors to the Dartmouth Outing Club Summit Camp atop Mount Moosilauke rubbed their eyes when they noticed a shimmering streak of blue to the westward. Guide books were revised, trail signs relettered, and Long Pond was formally introduced to White Mountain habitués. But Long Pond was destined to suffer growing pains. The crisis came in mid-July, 1935. Continued hot weather raised the water temperature so high that thousands of trout crowded into the cooler water of the narrow inlet. Fishermen by day and poachers by night were not slow to take advantage of the situation. CCC

(Turn to page 462)

## TREES AND THEIR USES—No. 77—OREGON WHITE OAK





## It takes more than a hatched chick to produce a poultry crop

**M**ILLIONS of baby chicks are being hatched to produce eggs and meat for the vital energy needed by the armies and civilian populations of the United Nations.

However, it requires more than a hatched chick to assure a bounteous poultry crop. Proper housing, sanitation, good feed, and the care and management of experienced farmers are vital. For after nature's miracle of reproduction, nothing can take the place of good husbandry.

In like manner, the products of the forest need intelligent care and management. Tim-

ber, a product of the soil, is a crop measured by years rather than by seasons. In forest farming, good husbandry is also practiced by management.

Growing timber is protected against fire, insect and disease. For every mature tree that is harvested and sent to market as timber products, nature is seeding and men are planting new trees to take its place. America can look forward to renewing crops of tim-

ber to meet future requirements for homes, factories, farm buildings and other shelter.



**WEYERHAEUSER**



# TRAIL RIDERS COMPLETE FIFTIETH EXPEDITION

THE fiftieth expedition of The American Forestry Association's Trail Riders of the Wilderness was successfully completed on August 8 in the Flat Tops Wilderness of the White River National Forest, Colorado. With twenty-two riders participating, it was the third and final expedition for 1943, earlier parties having ridden in the magnificent Flat Tops country and in the Great Smoky Mountains of North Carolina and Tennessee. Seventy-three riders, representing nineteen states and the District of Columbia, took part in the three trips.

The history-making expedition set out from Glenwood Springs on July 28 with M. Walter Pesman of Denver, author and conservationist, in charge as representative of The American Forestry Association. Included in the party were Mrs. Margaret L. Bruns of Long Island, New York, second-ranking Trail Rider on her ninth expedition; A. H. Hutchinson of Chicago, third-ranking Trail Rider, on his seventh expedition; Miss Roma W. Hall of Parsons, Kansas, on her third expedition; and Miss Caroline Flaccus of Ben Avon, Pennsylvania, Mrs. Dorothea Sheats of Washington, D. C., Mrs. Bernice Herson of Kansas City, Missouri, and Mrs. Frederick H. Shillito of Long Island, New York, on their second expedition.

Riding with the Trail Riders for the first time were Miss Marianne Wrench and Miss Louise Butler of Los Angeles, California; Richard A. Fean and Pablo Jacobi of New York; B. Britton Gottsberger of New Haven, Connecticut; Arthur Koehler of Madison, Wisconsin; Lee and Charles Mattes and George O. and Mohler S. Witwer of South Bend, Indiana; Ware Cattell and Mrs. W. L. Rehm of Washington, D. C.; Frank Reh, Jr. of Clinton, Maryland; Frances W. Pennypacker of Phoenixville, Pennsylvania; and Miss Harriet Yeomans of Cambridge, Massachusetts. The party medical officer was Dr. Frederick H. Shillito of Long Island, New York; packing was in charge of Mr. and Mrs. Rich Thomson of Glenwood Springs.

Under the leadership of Professor J. V. K. Wagar, of the Division of Forestry and Range Management, Colorado State College, the first 1943 expedition to the Flat Tops Wilderness put out from Glenwood Springs on July 13. Thirty-one riders made up this party, including Miss Marian Mair of Oneonta, New York, top-ranking Trail Rider, on her tenth expedition; Mrs. Margaret L. Bruns of Long Island, New York, on her eighth expedition; Miss Elizabeth Falconer of Cleveland, Ohio, and Mrs. Rose Neal of Detroit, Michigan, on their

fifth expedition; Miss Helen K. Ketterer of Pittsburgh, Pennsylvania, on her fourth expedition; Dr. Charles W. Harnsberger of Washington, D. C., Miss Martha B. Humm of Bay Village, Ohio, Mr. and Mrs. Oscar Ben Rosenblum of Sharon, Pennsylvania, and Miss Madge M. Young of Philadelphia, on their third expedition; and Sam T. Hayward of Los Angeles, California, Henry B. Van Dyne of Troy, Pennsylvania, and



**Top-ranking Trail Rider is Marian Mair of Oneonta, New York, veteran of 1500 miles with ten expeditions**

Mrs. Myrtle Westerberg of Chicago, on their second expedition.

Riding with the Trail Riders for the first time were Mrs. Walton C. Ferris, Miss Hortense Allen and Mrs. Emah B. Ammon of Lincoln, Nebraska; Dr. and Mrs. Lorrimer Armstrong of Westfield, New Jersey; Mrs. Sam T. Hayward and the Misses Jane and Nancy Hayward of Los Angeles, California; Mrs. Earl Jardine of LaPorte, Indiana; Miss Dorothy Johnson of Denver, Colorado; Miss Marguerite Jones of Silver Springs, Maryland; Leon M. Levy of Scranton, Pennsylvania; Mrs. M. L. Livingston of New York; Mr. and Mrs. A. L. Pither of Highland Park, Illinois; Miss Beverly

Shannon of Washington, D. C.; Dr. Helen Jane Zillmer of Milwaukee, Wisconsin; and Miss Aimee Zillmer of Watertown, Wisconsin. Medical officer for the party was Dr. William Arthur Shannon of Washington, D. C.; packing was in charge of Mr. and Mrs. Rich Thomson of Glenwood Springs.

The expedition to the Great Smoky Mountains National Park, in charge of Dr. James A. Beal of the School of Forestry, Duke University, who represented The American Forestry Association, set out from Asheville, North Carolina, on June 17. Riding with this party were Miss Marian Wayave of Arlington, Virginia, on her fourth expedition; Miss Miriam Houdlette of Melrose Heights, Massachusetts, and Miss Margaret Gausewitz of Milwaukee, Wisconsin, on their third expedition; and Miss Martha H. Biehle of New York, and Neil C. Hutsinpillar of Crawfordsville, Indiana, on their second expedition.

Riding with the Trail Riders for the first time were Mr. and Mrs. Lewis V. Bassie of Arlington, Virginia; William H. Kain of York, Pennsylvania; Miss Alice L. Burnett of Brooklyn, New York; Dr. P. E. Deckard of New York; Martin A. Goerges of Chatham, New Jersey; Dr. Arthur F. Woolsey and Richard Gordon of Marlboro, New Jersey; Irving Richter of South Orange, New Jersey; Dr. Miles H. Robinson of Nashville, Tennessee; and Dr. and Mrs. Oliver K. Parry, Miss Ann Parry, and Lynn and Kesler Parry of Asbury Park, New Jersey. Medical officer for the group was Dr. J. Berkeley Gordon of Marlboro, New Jersey; in charge of packing was Thomas W. Alexander of the Cataloochee Ranch, Waynesville, North Carolina.

The Flat Tops Wilderness of the White River National Forest is a land of alpine meadows, broad valleys of virgin fir and spruce and flat, broken peaks. Elevations range up to 12,000 feet. The section of the Great Smoky Mountains National Park explored by the Trail Riders straddles the high mountain boundary between North Carolina and Tennessee—a wilderness of lofty ridges, peaked and spurred, of fast water and richly varied forests and wild flowers. Elevations range up to 6,000 feet.

The first expedition of Trail Riders set out from Missoula, Montana, in the summer of 1933 exploring the great Flathead-Sun River Wilderness of the Flathead and Lewis and Clark National Forests. Since then, parties have ridden into the major wilderness areas of ten different states.



# RIGHT!

—and let RCA Radio help win this fight, too

Of course everything possible must be done to prevent forest fires from starting.

All the educational effort in the world notwithstanding, there will always be people whose careless acts cause fires.

So it is terribly important to provide means for organizing fire-fighters quickly to combat fires before they get out of hand.

One of the most effective means of doing this is by radio.

RCA Emergency Radio Systems today are helping fire wardens in many communities.

Right now, of course, RCA manufacturing plants are working night and day producing radio equipment to help fight Nazis and Japs.

But in RCA laboratories the work goes on. And just as soon as war conditions permit, RCA will supply forest fire fighters with better radio equipment and service than ever before. *RCA Victor Division, Radio Corporation of America, Camden, N. J.*



## RCA EMERGENCY COMMUNICATIONS EQUIPMENT

# DRASTIC FOREST REGULATION IN NEW OMNIBUS BILL

## Wallgren Bill Would Centralize Great Powers in Secretary of Agriculture

FEDERAL regulation of forest practices on private lands, with great powers centralized in the Secretary of Agriculture, features the new forestry omnibus bill introduced on July 8 by Senator M. C. Wallgren of Washington. Unquestionably the most drastic regulatory measure yet presented to Congress, the bill, S. 1330, consists of ten titles, each in effect a separate bill. *Title No. 1*, devoted to public regulation of private forest lands, would be known as the "Forest Practices Act." The other titles have no connection with regulation.

Referred to the Senate Committee on Agriculture and Forestry, the bill would empower the Secretary of Agriculture to regulate cutting on forest properties, whether in public or private ownership; would create "administrative areas" without regard to state or property boundaries; and would control interstate shipment of forest products.

It would invest in the Secretary authority to deal direct with forest operators and forest products industries in establishing cutting rules; would authorize his agents to examine records of forest and mill operators, inspect activities, and take over the administration of properties.

To advise the Secretary, the bill calls for the establishment of a National Forestry Board of twelve members, to be appointed by the President. Membership would be made up of representatives from industry and labor, from groups representing forest owners, farmers, transportation, natural resource conservation, water conservation and the ultimate consumer of forest products—the public. Area advisory boards would be appointed by the Secretary in the "administrative areas" the proposed act would establish.

The "rules of forest practices" which the Secretary, under the provisions of the bill, would be empowered to set up, have as their objectives:—(A) Providing for adequate restocking after cutting with trees of desirable species and condition; (B) prohibiting premature or wasteful cutting in young stands; (C) providing for reserving for growth and subsequent cutting a sufficient growing stock; (D) preventing the use of logging methods or other practices tending to cause avoidable damage to uncut trees or young growth; (E) regulating grazing and protection of watersheds; and (F) prohibiting clear cutting, or lim-

iting the size of a tract that may be clear cut, in areas where clear cutting will seriously interfere with protection of the watershed, or in order to maintain a suitable growing stock or insure natural reproduction."

The Secretary would also be empowered to include forest practice rules concerning forest fire control, disposal of logging slash, and provisions regarding removal of diseased and insect-infested trees—matters now dealt with under state laws.

Under the law, forest landowners would be permitted to prepare their own working plans provided they are approved by the Secretary and accomplish the objectives set forth in the official rules of forest practices. Recourse to the courts would be possible in the event of an adverse decision by the advisory boards or by the Secretary.

The bill provides elaborate machinery for enforcement. The Secretary may provide for field inspections to determine whether established forest practice rules are complied with; he may require each operator to keep records of his operations, give notice of his intention to cut living timber, and make such other reports as may be called for. Violation of the provisions of any forest practice rule or failure to carry out the provisions of any accepted working plan would be subject to a \$10,000 fine. Failure to keep the records called for would be subject to fines of \$50 for each omission.

The main weapon of enforcement, however, is set forth in the section making it unlawful for any person "to transport, ship, offer for transportation, deliver, or sell in commerce, or to ship, deliver, or sell with knowledge that shipment or delivery or sale thereof in commerce is intended, any forest product produced in such state or region unless a certificate has been obtained therefor."

Thus interstate shipments of forest products would have to be accompanied with a "certificate of clearance" testifying that the products in question were produced in accordance with the forest practice rules of the Secretary of Agriculture. By refusing to issue certificates, the Secretary could in effect prevent the marketing of any forest products cut in violation of any forest practice rule, since transportation companies would be held responsible for obtaining certificates before accepting products for ship-

ment. Enforcement would be obtained by injunction and by a \$10,000 fine.

The bill's definition of "forest land" subject to the proposed regulations is quite broad. It states: "Forest land includes any land bearing a growth of trees of any age, and any land from which the tree growth has been removed by cutting or otherwise and which is suitable chiefly for forest crop production, and any land on which a sustained growth of trees, arborescent growth, or chaparral is necessary for protecting and conserving the water and soil resources and regulating run-off."

Forest lands exempted under the law are: "All small woodlots the forest products of which are wholly or almost wholly (1) used by the forest operator for domestic, non-industrial purposes, and (2) not marketed in commerce." The Secretary may also exclude other forest tracts regulation of which for various reasons is not considered essential.

The nine other titles within the omnibus bill, many of which were suggested in the recommendations of the Joint Committee on Forestry in its report of March 24, 1941, deal with Clarke-McNary Act amendments, forest management and utilization extension, forest co-operatives, forest insurance, community forests, forest survey amendments, national forest planting, financial contributions to local governments, and national forest acquisition.

*Title No. 2* would liberalize the use of Clarke-McNary funds, basis for federal and state cooperation in forest fire prevention, forest planting and other items of forest extension, or permit appropriation of larger sums. One section would extend the use of funds for production of forest planting stock to all classes of forest owners instead of confining them largely to farmers as at present. Appropriations in excess of the \$100,000 set forth in the original act for this purpose would be permitted.

Another section would liberalize the provisions of the original act for giving technical assistance in forestry to farmers and increases the authorization for federal expenditures from \$100,000 to a maximum of \$2,500,000. It is also proposed to amend the act so that broader powers would be given to plan and direct surveys "on any forest land" for the detection and control of insect pests and plant diseases.

Still another section would repeal the



provision now in the Clarke-McNary Act requiring that state funds be contributed to match federal expenditures. The funds under the act, if amended, may be expended "upon the basis of such contributions from cooperating agencies as the Secretary of Agriculture may require, in the form of services, materials, or otherwise."

*Title No. 3* — would increase federal assistance to forest landowners and forest industries in process of growing, harvesting, processing and utilizing forest products. It provides for cooperation on a financial basis with public and private agencies and with individuals.

*Title No. 4* would increase the authority of the Secretary of Agriculture to assist in the formation of forest cooperatives among forest landowners to further the growing, harvesting and disposition of forest products. It would also authorize the Secretary to assist in financing such cooperatives in their formative stage.

*Title No. 5* would establish federal forest insurance against loss by fire or tornado under amended provisions of the Federal Crop Insurance Act.

*Title No. 6* would appropriate not more than \$750,000 annually to complete the survey of forest resources begun in 1928 by the U. S. Forest Service, and to keep it up to date.

*Title No. 7* would make the Fulmer Act of 1935, giving financial assistance to states in the acquisition of state forests, more workable and authorize an appropriation of \$10,000,000, of which not more than \$2,500,000 would be appropriated in any one year.

*Title No. 8* would amend the National Forest Planting Act of 1930 to increase appropriations to "such sums as may be required" annually. The original act limits appropriations for restoring to productivity by planting millions of acres on the national forests to a maximum of \$400,000 annually.

*Title No. 9* would change the basis of financial contributions from national forest receipts to local governments.

*Title No. 10* proposes two additional bases for purchase of lands to be added to national forests. The first would be to permit purchase of immature or merchantable timber at prices approximating its expected value at the end of a sixty-year period. The second would be an authorization to the Secretary of Agriculture to borrow from the Reconstruction Finance Corporation sums not to exceed \$250,000 outstanding at any one time, and at a rate of interest not in excess of three percent, for purchase of lands, including lieu payments for taxes and other expenses.

*Wanted*



TREE SEED

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# TIMBER CONNECTOR—Key to Giant Wood Structures

By HOLMAN HARVEY

AN announcement by the War Production Board that structural timber used with steel ring timber connectors saved 400,000 tons of steel last year, has been followed by the disclosure that the Navy has employed this system of construction to build the world's largest hangar for non-rigid airships.

In this gigantic structure "somewhere in continental United States," soaring timber arches rise 153 feet from the floor, clear-spanning an unobstructed area 237 feet wide and 1,000 feet long. All of the timber in the hangar—more than 3,000,000 feet in arches and roof

engineering system that has been built around it, has played so major a part in the past few years in projecting timber into the front rank of heavy construction materials.

For the timber connector is as simple as the lever, the wheel, the gear, and other landmarks in mechanical progress, and its principle may be as simply stated. It is an implement for stress dispersal—especially and ideally adapted to timber construction.

Starting with the split ring as the most versatile type of the group, timber connectors include toothed rings, claw

metal has been enormous because timber, used with one pound of steel in the form of connectors and their accompanying bolts, washers, and miscellaneous hardware, takes the place of thirteen and a half pounds of structural steel. Over 30,000 tons of metal were saved in the newly opened Douglas cargo transport assembly plant—the world's largest factory built of wood.

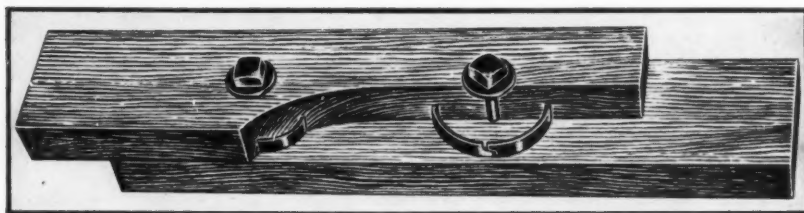
With this record, it is surprising how little is understood, even yet and even among many structural engineers, of the split ring timber connector and how it operates. Here is a simple explanation:

Timber connector rings vary in size from two-and-one-half inches to eight inches in diameter. The ring is split across at one point, the split being in the form of a tongue-and-slot. The purpose of the tongue-and-slot split is to provide for possible expansion or contraction of the timber. The split operates as follows:

To insert a timber connector between two pieces of timber to form a joint, each facing piece first is grooved to receive the ring. One half of the ring is to sink into the groove of one of the two timber members and the other half into the groove of the other member, so that, when the two members are joined, face to face, the ring is wholly embedded between them. The circular grooves, each one-half the depth of the ring, are cut with a special grooving tool to a dimension slightly larger than the unexpanded circumference of the ring which is to be inserted. When the ring is forced into the groove, the tongue-and-slot split is forced apart slightly. When the ring is thus embedded in the timber with its split slightly parted, it can expand or contract with the wood and thus form at all times a tight and rigid connection.

The connecting through-bolt, which formerly carried the stress in timber joints, is relieved of stress by the embedded connector ring, and now serves principally to hold the two timber members together, face to face. In the past, weakness at the bolted connections had retarded the use of timber as a heavy structural material. Pound for pound, timber has the strength of steel but its bolted joints were its Achilles heel. The timber connector spreads the load on a timber joint over practically the entire cross-section of the wood and thus brings into play the full structural strength of the lumber.

Other types of connectors have teeth which are forced into the wood, no pre-grooving being necessary.



*How the timber joint works. Embedded in facing members, the tongue-and-groove split allows for expansion or contraction of the timber, thus forming a rigid connection. The ring spreads the load on a joint over practically the entire cross-section of the wood, bringing the full structural strength of the lumber into play*

sheathing—is pressure-treated with a mixture of ammonium and boron chemicals to make it flame-proof.

From any engineering point of view, this is the greatest structure ever erected of timber, but its significance to the profession will be seen in these words from the official War Production Board statement which discusses the project:

"Such a structure could not have been built of wood by ordinary methods without the use of timber connectors."

However, with connectors, and with heavy impregnation of flame-proofing chemicals, this vast, multiple-truss building has been built and, moreover, built not as a temporary, inflammable makeshift soon to be torn down and replaced by something else but, on the contrary, designed and engineered in its own right as a permanent naval installation. While flame-proofed structural timber was selected originally in order to conserve steel, from the standpoint of pure engineering interest it is only incidental that 2050 tons of structural steel thus was saved.

Washington's official recognition of the timber connector brings into the spotlight once again this simple, ingenious device which, with the revolutionary

plates, shear plates, and grids, one or another of which types is suitable for joining wood to itself or to any other structural material.

Timber connectors are manufactured in the United States by the Timber Engineering Company of Washington, D. C., a subsidiary of the National Lumber Manufacturers Association. Taking the initials of the company, they are known as "Teco" timber connectors. Fourteen American factories now are engaged in manufacturing these connectors and the special tools with which they are installed.

In ten years, more than 100,000 structures of 600 types, in many countries, have employed Teco connector construction. During America's rearmament, scores of large Army, Navy and Maritime Commission projects have been built of timber with the Teco connectors—\$115,000,000 worth of offshore and foreign bases; a \$65,000,000 ordnance plant; a \$52,000,000 magnesium plant; a \$30,000,000 cantonment; a \$10,000,000 shell loading center; and an aircraft plant in which 27,000,000 board feet of lumber, including 5,800 timber connected trusses, was used.

In all of this, the saving in structural

# 7 things you should do to keep prices down!

If prices soar, this war will last longer, and we could all go broke when it's over. Uncle Sam is fighting hard to keep prices *down*. But he can't do it alone. It's up to *you* to battle against any and every rising price! To help win the war and keep it from being a hollow victory afterward—you must *keep prices down*. And here's how you can do it:



## 1. BUY ONLY WHAT YOU NEED

Don't buy a *thing* unless you *cannot* get along without it. Spending can't create more goods. It makes them scarce and prices go up. So make everything you own last longer. "Use it up, wear it out, make it do, or do without."



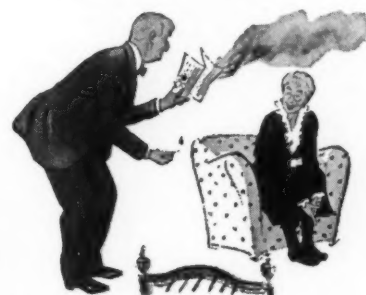
## 2. PAY NO MORE THAN CEILING PRICES

If you do pay more, you're party to a black market that boosts prices. And if prices go up through the ceiling, your money will be worth less. Buy rationed goods only with stamps.



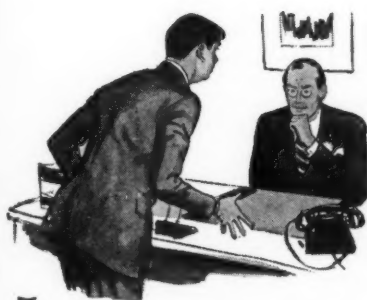
## 3. SUPPORT HIGHER TAXES

It's easier and cheaper to pay for the war as you go. And it's better to pay big taxes *now*—while you have the extra money to do it. Every dollar put into taxes means a dollar less to bid for scarce goods and boost prices.



## 4. PAY OFF OLD DEBTS

Paid-off debts make you independent now . . . and make your position a whale of a lot safer against the day you may be earning less. So pay off every cent you owe—and avoid making new debts as you'd avoid healing Hitler!



## 5. DON'T ASK MORE MONEY

in wages, or in prices for goods you have to sell. That puts prices up for the things all of us buy. We're all in this war together—business men, farmers and workers. Increases come out of everybody's pocket—including *yours*.



## 6. SAVE FOR THE FUTURE

Money in the savings bank will come in handy for emergencies. And money in life insurance protects your family, protects you in old age. See that you're ready to meet any situation.



## 7. BUY WAR BONDS

and hold them. Buy as many as you can. Then cut corners to buy more. Bonds put money to work fighting the war instead of letting it shove up prices. They mean safety for you tomorrow. And they'll help keep prices down today.

### KEEP PRICES DOWN . . .

*Use it up . . . Wear it out . . .*

*Make it do . . . Or do without.*



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These stamps will help spread the message of forest fire prevention. Each stamp beautifully printed in 4-colors. Available in sheets of 100 at \$1 a sheet. They are ideal for use on letterheads and envelopes, and each sheet used will mean that 100 individuals have been appealed to directly in the immediate fight to "stop forest fires before they start."

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9-43

## Ask Greater Public Aid in Elm Disease Fight

Increased participation by elm owners, tree lovers, public utilities, state highway departments and interested organizations is needed in the fight against the Dutch elm disease, the Department of Agriculture has announced. Greater public cooperation is needed, it was stated, because of reduced federal activities in the control program brought about by the manpower shortages and limited control facilities.

The immediate objectives of the control program were listed by the Department as determining the probable direction and extent of spread in all localities where the disease organism and the carrier beetles occur; preventing so far as possible the spread of the disease to disease-free areas; and conducting an intensive eradication program in isolated areas where the disease is known to occur outside of the major disease region.

Elm owners and other cooperators in Connecticut, Massachusetts, New York,

Pennsylvania, New Jersey, Ohio, Indiana, West Virginia, Virginia and Maryland can help combat the disease by maintaining elm trees in vigorous healthy condition and by disposing promptly of all weakened, dead and dying elms and broken or affected limbs. Owners with woodpiles containing elm and recently cut elm slash are urged to peel the bark from such material or destroy it by burning. Any elm material cut or found after April 15 in any year should be destroyed immediately.

Elm owners in Kentucky, Illinois, Vermont and New Hampshire are requested to look for symptoms of the disease and collect several samples seven inches long by one inch in diameter from parts of elms which show wilting foliage and brown streaking in the wood under the bark. The samples should be sent to the U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine, 503 Main Street, East Orange, New Jersey.

## WPB to Stimulate Output of Forest Products

To help stimulate the output of lumber, pulpwood and other forest products urgently needed for the war, a special Timber Production War Project is being launched by the War Production Board and cooperating agencies.

Under the general direction of J. Philip Boyd, director of the WPB's Lumber and Lumber Products Division, the project is designed to bring together stumpage owners and operators; help operators obtain needed logging and mill equipment, repair parts, trucks and tires; give technical advice on logging, milling methods and devices; cooperate with the War Manpower Commission in locating, recruiting and training manpower; assist in cost and production analyses; give advice on financing of operators, and provide help in investigating the need for access roads.

"The setting up of this project does not mean that we will enter into the cutting and milling business," Mr. Boyd stated. "The program is designed to stimulate production in existing facilities that are not operating at full capacity. In the eastern half of the country there are 7,500 smaller mills, many of which are now idle much, if not all, of the time and which have an annual average cut of less than 100,000 board feet. While their individual capacity is small, their numbers make them an important factor in meeting wartime lumber products requirements."

The U. S. Forest Service will administer the project through its three eastern regions with headquarters at Phila-

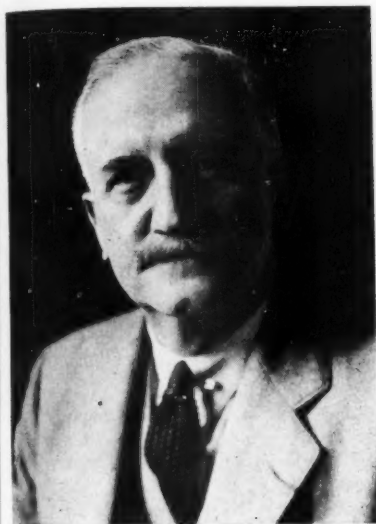
delphia, Atlanta and Milwaukee. It is to be financed primarily by WPB with personnel and additional funds contributed by the Forest Service and other forestry agencies.

Prior to the launching of this program, the WPB announced a reorganization of its Division of Lumber and Lumber Products with increased staff to obtain maximum production and best distribution for war and essential civilian use. The new set-up emphasizes three over-all phases of the Division's work—program, operations and marketing control. The Program Branch, under the direction of Henry Clepper, will gather, analyze and report on data relative to the supply and demand for lumber and lumber products and the productive capacity of the industry. The Operations Branch, under the direction of Harold E. Holman, will deal with the problems affecting production of lumber and lumber products, including development of new sources of supply or new productive facilities. It will review applications and assignment of preference ratings for the allotment of material necessary in production, and will render assistance to the industry on transportation, manpower and price problems affecting production.

The Marketing Control Branch, under the direction of J. N. Winton, will direct the allocation and distribution of lumber and lumber products. Its functions will include cooperation with the Canadian Timber Control Office and control of imports and exports of lumber.

## John D. Guthrie, Soldier-Forester, Retires

MAJOR John D. Guthrie, forester, author and soldier, who has been associated with the United States Forest Service practically since its creation, retired on May 1. Beginning his career forty years ago as a student assistant under Gifford Pinchot in the old Bureau of Forestry, he served continuously, except for two years of foreign service with the 10th



John D. Guthrie

Engineers, Forestry, during World War I, until 1933 when he was called into the Civilian Conservation Corps as general inspector.

His long and loyal service in federal forestry, which began after his graduation from Union College and, in 1906, from the Yale Forest School, has been highlighted by notable achievements. The American Forest Fire Medal, awarded for heroism in fighting forest fire, was established largely through his foresight and initiative. Outstanding public relations work in forestry gained for him the Pack Prize of the Society of American Foresters.

The author of countless articles on forestry and conservation, many of which have appeared in AMERICAN FORESTS, Major Guthrie was the editor and publisher of two volumes of verse dealing with the forests and the men of the forests, and, more recently, the author of the book "Saga of the CCC," published by The American Forestry Association. During his term as vice-president of the Society of American Foresters, of which he is a Fellow, he made outstanding contributions to a code of ethics for the Society.

Foreign service with the Army Engineers during World War I, won for him awards from the French and Russian

governments. Subsequently, he traveled widely in France, Germany, Austria, Italy, Hungary, Finland and Sweden. In 1926 he was a delegate to the International Forestry Congress in Rome, and in Budapest in 1936.

His first assignments in American forestry, prior to his studies at Yale, were on watershed and planting studies in the West and on timber evaluation surveys in Texas, the Appalachians and in Maine. Later, in 1908, he became a forest supervisor, in charge of the Apache National Forest in Arizona—one hundred miles from the nearest rail-head. In those days there were few trails, few ranger stations, no telephones and very little control over the use of the forest. Thus for a decade he pioneered in forest administration and construction—and with notable achievement. Later, in the post-war years, Major Guthrie became assistant regional forester in charge of public relations in the Northwest Region, with headquarters at Portland.

One of Major Guthrie's contributions to the Civilian Conservation Corps is aptly presented in the following tribute made shortly after his retirement by one of America's top-ranking foresters: "It was because he looked upon conservation as a career service that Guthrie was able to appraise intelligently the problems of CCC personnel, and to wage many a fight in their behalf. This appreciation of the human values in any organization was a phase of his sympathetic interest in young men, particularly junior foresters. It may be doubted if even the deans of forest schools have enjoyed Guthrie's influence as a mentor."

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**REPRESENTATIVE NORTH AMERICAN FRESH-WATER FISHES**, by John T. Nichols. 128 pages, illustrated in black and white and color. The Macmillan Company, New York. Price \$1.25.

A pocket edition into which the author, who is Curator of Fishes at the American Museum of Natural History, has packed a great variety of data about fishes into a very limited space. It will be a useful little book to the many thousands of people interested in the science of fishes, for the information, technically correct, is very readable and full of unique and unusual facts. Each species is described on one page, and faced by a full-page illustration by Andrew Johnson, delightfully done.

**INDIANS OF SOUTH AMERICA**, by Paul Radin. Published by Doubleday, Doran & Company, New York. 324 pages. Illustrated. Price, \$4.00.

Since 1498 South America has been penetrated in all directions, its numerous rivers ascended and its forests and jungles repeatedly traversed. Not until less than a hundred years ago has there been any attempt to record the history of these great civilizations whose descendants greeted the caravels of Columbus. Dr. Radin in this magnificent book has given the first connected picture of these cultures and civilizations. It is a panoramic survey of the main Indian cultures of the great South American continent, discussing their distinctive traits, their relationships to one another, and their kinship with the Indians of Central and North America. This is truly a great work.

**FOREST ECONOMICS AND FINANCE**, by P. L. Buttrick. Published by John Wiley and Sons, New York. 484 pages, 20 tables, 47 figures. Price \$4.50.

Designed primarily as a textbook, this work presents enough background material regarding forestry in general to make it useful to economists and others seeking an understanding of the broad aspects of forestry questions.

Following introductory chapters on what forestry is and the various classes of private as well as public interests which are or should be concerned with its practice, subsequent chapters on such general matters as "business and financial organization," the "nature of capital and credit," "interest and discount," "appreciation and depreciation," and "value cost, price and profit" complete the first part. Chapters on the middle portion treat such questions as "the economic and social values of forests," the economics of forest exploitation and of protection, recreation and wildlife

## NEW BOOKS and OTHER PUBLICATIONS

A list of Selected Books on Forestry and related fields of Conservation is available to members of The American Forestry Association on request.

forests, land as the basis of forest enterprises, costs and profits in forestry, sustained yield forestry, forest taxation, tariffs and insurance, and the appraisal of forest values. In the final portion "forests as a private enterprise," the "economics of public forests," and "public assistance and regulations of private forests" are discussed. An appendix provides compound interest tables necessary in calculation of costs in long-term forest enterprises.

The book fills a real void from the standpoint of economics in modern American forestry literature left since Fernow's *Economics of Forestry* (1902) went out of print. It is unique in uniting the financial with the other economic aspects of forestry—forest finance having heretofore followed the European pattern and been conjoined with forest management or treated by itself—forest finance being logically but a specialized branch of forest economics, as the author points out.

Despite minor errors in small matters, the reader or student who gets as much out of it as the author has evidently put into it, cannot avoid being well informed on a wide range of subject matter not readily available elsewhere in anything like such concise and well-organized form.—LOUIS S. MURPHY.

**WILDLIFE OF IDAHO**, by William M. Rush, Idaho Fish and Game Commission, Boise, Idaho, 1942. 299 pages, illustrated. Price \$1.00.

This book is designed for use in the upper elementary grades and high schools of Idaho, with the intent of educating students regarding the mammals, birds and fishes of the state. It is a well

organized presentation of descriptive and illustrative material concerning the various wildlife species, zoological classifications, and animal stories.

The text should be useful in acquainting younger children with the animals, birds and fish of Idaho and has much broader application in that most of the wildlife dealt with is found in other states. The older ones will profit by a knowledge of animal classification, particularly if it is coordinated with a general course in biology. The material on relation of wild to domestic dogs and cats is interestingly presented and valuable. The illustrations are well adapted to enabling students to recognize birds and animals in the field.

**RIVER OF RUINS**, by Louis J. Halle, Jr. Henry Holt and Company, New York. 334 pages, illustrated. Price \$3.00.

A region known as the Petén, lying partly in Guatemala and partly in Yucatan, once supported a great civilization with cities widely spread out, towering temples and far-flung highways. Today these cities lie in ruins, long buried and hidden in a primeval forest sparsely inhabited.

The Petén and the remnants of its past civilization form the dramatic scene of Mr. Halle's book—a travel narrative which describes what the author and a friend saw on an extended trip of exploration into the region. It deals not only with the mystic ruins of the Maya civilization where millions of people once lived but it gives a vivid account of the jungle as it is today, its wildlife, its trails and its survivals of peons, bush runners and chicleros. *River of Ruins* is interesting and informative reading for everyone, but for the legions who are intrigued by archaeological explorations simply and non-technically recounted, it ought to be absorbing reading.

**WATER—WEALTH OR WASTE**, by William Clayton Pryor and Helen Sloan Pryor. Published by Harcourt, Brace and Company, New York City. Illustrated. 242 pages. Price \$2.50.

The subject of water—one of the most important natural resources of the world, is presented here in all its phases as it relates to human use and need. Such commonplace topics as city water supply systems, water as a source of power, water in mining and manufacture, floods, flood control, and irrigation have been handled with such dexterity that the entire book makes surprisingly interesting reading. Students of social science will find it especially appealing, and the general reader will appreciate its information and charm.



**CEANOTHUS**, by Maunsell Van Rensselaer and Howard E. McMinn. Santa Barbara Botanic Garden, Santa Barbara, Calif. 308 pages. Illus. Price \$2.50.

Sponsored by the Pacific Zone Clubs of the Garden Club of America, this splendid book contains the first complete report ever published on that distinctive group of North American flowering shrubs,—the genus *Ceanothus*. Divided into two parts, Part I, designed primarily for the horticulturist, treats *ceanothus* for gardens, parks and roadsides while Part II, designed primarily for the botanist, is a systematic study of the genus. The fifty-five species of this remarkable group of plants vary from low creepers to small trees, the exquisite flowers ranging from deep blue to pink, lavender and white, the blue being more familiarly known because of the rarity of blue-flowering shrubs.

This unique book, combining the interests of the garden lover and the professional botanist, is a "must" for all horticulturists, for the lovely, blue-shaded masses of *ceanothus* help us remember—in these hectic days of international strife—"One is nearer God's Heart in a garden than anywhere else on earth."

**THE WILD TURKEY IN VIRGINIA: ITS STATUS, LIFE HISTORY AND MANAGEMENT**, by Henry S. Mosky and Charles O. Handley, Commissioners of Game and Inland Fisheries, Richmond, Va. 281 pages, illustrated. Price \$1.00.

This book is an exceedingly valuable study of the factors influencing past and present distribution and abundance of the king of American game and table birds in Virginia.

The authors' approach to the problems facing the turkey in adjusting itself to a man-made environment and those facing man in creating conditions under which turkeys and turkey-hunting may be perpetuated is scientific and straightforward. They have not hesitated to state their belief that over-hunting rather than changes in environment and non-human enemies is the primary reason for a serious decline in wild turkey population in Virginia.

The turkey is a forest bird dependent in large measure on oak mast for its food supplies, hence the relation of forest cutting practices and turkey welfare is stressed. Attempts to build up turkey populations by artificial propagation are given considerable attention. It appears that one of the problems involved is to keep artificially reared wild turkey sufficiently wild to be attractive to sportsmen. The authors are conscious of economic and human as well as technical problems and all measures proposed are discussed from these vital angles.

## Britain's Plans

(From page 438)

More important, perhaps, it has outlined a second post-war forestry program which is now awaiting Parliamentary approval. The new program sets its goal far beyond those of the first one, which thought only in terms of providing for the needs of a war toward the end of the present century. The new plan envisages home forests able to supply about thirty-five per cent of expected annual timber requirements as soon as possible.

The radical nature of the plan is evidenced from the fact that in recent years, before the present war, home-grown timber has provided only about four percent of the country's needs. Events since the last war lead the British to think that exhaustion of forests in other parts of the world make it desirable in the future to place more dependence on home-grown timber in peace as well as wartime. Implementing of the plan will require afforestation of 3,000,000 acres of bare land and the reconstruction of 2,000,000 acres of existing forests over a fifty-year period beginning with the end of the war. Since most of the existing woodland is so badly depleted, replanting will be the quickest form of reconstruction.

Five million woodland acres amount to between nine and ten percent of the land area of England, Scotland and Wales, but the Commission believes that the 3,000,000 acres of land to be afforested can be taken from low-grade grazing land with but infinitesimal loss

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in meat production and that it will not  
be necessary to afforest any arable land.

As mentioned above, the first post-  
war plan took little account of Britain's  
2,000,000 acres of private forests. The  
present plan considers their rehabilita-  
tion essential. The Commission takes oc-  
casion to remark that if the Acland pro-  
gram had provided for controlling pri-  
vate cuttings after the last war, coupled  
with adequate assistance to private tim-  
berland owners, a half billion cubic feet  
of timber could have been accumulated  
between the wars. It also states that if  
plantings had been made more rapidly  
under the first plan, a far larger sup-  
ply of pit and other low-grade wood  
products would have been available  
when the second war came.

The new plan recommends: First, con-  
tinuing in operating the present wartime  
system of felling licenses under which  
the government tells the owner when  
and how much timber he shall cut; sec-  
ond, giving owners of such larger for-  
ests as the forest authority thinks use-  
ful in the national plan the alternative  
of selling their property to the govern-  
ment or agreeing to manage it under  
government made or approved working  
plans. If the owner accepts this alterna-

tive the government is to assist financial-  
ly up to a point where operations will  
yield him a financial profit. Owners  
who agree to this form of public regula-  
tion will be said, using the phraseology  
of the report, to "dedicate" their hold-  
ings. We shall probably hear much of  
"dedicated" and "non-dedicated forests"  
in the future. It is proposed that small  
forest areas designated as "small woods,"  
which the forest authority desires neither  
to buy nor to have dedicated, will re-  
main under the felling license system  
subject to a certain amount of public  
assistance to their owners.

If the plan is approved by Parliament  
and carried out as projected Britain will  
have public regulation of private for-  
ests on a scale more than commensurate  
with such regulation in most European  
countries and far beyond anything pro-  
posed in the United States.

To conserve timber for the future it  
is expected that it will be imported  
for immediate post-war reconstruction.  
Planting schedules under the new plan  
are designed to move more rapidly after  
a year or two to get well underway than  
under the earlier one. Under the Acland  
plan it was expected that 150,000 acres  
would be planted in the first decade.  
Actually only 138,271 acres were plant-  
ed. The Commission's new plan calls  
for a total of 1,100,000 acres in the first  
decade, 600,000 acres being in existing  
woodland. Under an alternate program  
(which it does not recommend) the total  
is set at 875,000 acres.

The outlay for the first decade is esti-  
mated at £47,119,000 (approximately  
\$190,000,000 at present exchange rate  
of \$4.05) under the desirable program  
and £37,306,000 (approximately \$151,-  
000,000) under the alternate plan.  
Against this is balanced expected returns  
from timber sales, rentals, etc., of  
£5,881,000 (approximately \$24,000,000)  
from the desirable and £5,270,000 (ap-  
proximately \$21,000,000) from the alter-  
nate plan during the first decade. No  
estimates of the cost over the fifty-year  
period are made, but the Commission  
does suggest the desirability of financ-  
ing the program in large part by long-  
term borrowing, both the better to dis-  
tribute the cost over a long period and  
to obtain assurance of stability of an-  
nual appropriations. This is of great  
importance in planting programs where  
land purchases, nursery production, and  
field planting must be planned to syn-  
chronize over a considerable period of  
years.

The Commission obviously desires ap-  
proval of its proposed program as soon  
as possible so that it may expand its  
nursery facilities and get set to go as  
soon as post-war year-I arrives. As an  
interesting corollary to the plan the  
Commission also suggests that it could

use 20,000 to 30,000 demobilized men on 2,000 miles of road building projects on the existing state forests. No provision for such construction seems to have previously been made.

Over the past twenty-five years the British Forestry Commission has done an outstanding job of establishing large areas of new forests in Britain and in building up a force of foresters trained to work in the formerly uncharted field of homeland forestry. On the basis of its past experiences and successes it seems assured that if it is given a man-

date to carry out the new plan Britain will eventually have an imposing new set of "wooden walls." Those of an earlier period were built in considerable part from imported timber. The new ones will be entirely home-grown.

*Copies of the Commission's plan entitled: "Post-War Forest Policy—Report by H. M. Forestry Commissioners," London, June 1943, may be purchased from the British Information Service, 30 Rockefeller Plaza, New York City. Price sixty cents.—Editor.*

## Christmas Trees Take to the Fields

(From page 430)

pruned is yet to be decided.

On December 4, 1942, Henry Jeffers first began marketing Christmas trees. He moved an old building to his tree yard, glazed the windows, set up a stove, installed a telephone and waited for business, which was not long in coming. He had made a study of markets and anticipated no trouble in disposing of his crop. His only advertising was a few letters. Here from December 4 until just before Christmas Henry Jeffers, well past three score and ten, spent every day in temperatures down to 20° below developing a new business and with the enthusiasm of a man forty years his junior. Word that Christmas trees were for sale in Harford spread rapidly and buyers came from as far as 150 miles. Mr. Jeffers tried to discourage long distance hauls, believing a more local market will absorb all his trees.

The trees were cut with hand saws. Several different types were used. Each cutter had his favorite. The trees were hauled by wagon to a central yard. The buyers paid a flat price for each species regardless of size. The trees were loaded like cornstalks; first a tier of butts out, then a row of tops out. This past season he sold only three species, Norway spruce at fifty cents, white spruce sixty cents, and balsam fir seventy-five cents apiece. With each load of trees he gave away two Scotch pines and when the buyers returned—often as many as four or five times—some of them wanted to buy nothing but Scotch pine. In some Christmas markets this species is preferred because it has stiff branches and holds its needles well. Fortunately too, it grows well in Harford. Twelve thousand trees were sold in 1942 and at least twice as many will be offered next year.

As we sat by the huge fieldstone fireplace in the old family homestead, our host ruminated. "Did you ever see lichens growing on a fireplace before?" We admitted we had not. He told us that one of his tree planters named Sid had built it. Sid, it appears, possesses proverbial Yankee ingenuity. Besides

being a stone mason of parts, he had built his own home, made his own dining room suite of curly maple, would not smoke a store pipe but made beautiful ones of laurel roots, painted well in oils and made hard cider that tasted like Sauterne. We later visited Sid and we saw and tasted for ourselves.

Continuing, our host told us of his experience with ministers looking for Christmas trees. In Mr. Jeffers' inimitable way,—"I had a lot of fun with those fellows. I took them out to the plantation, and after showing them some of the trees, they said, 'That's just the tree for our church.' I would say, 'Well, that is a beautiful tree but I'm afraid it would cost more than you'd want to pay. It's worth a lot of money.' You ought to see how glum they look. Then when I've played with 'em a while like a cat does a mouse, I say, 'Well, these trees are free to all county officials, churches and schools in Susquehanna

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County.' " Henry Jeffers is generous to a fault which is one reason why no attempt is made to appraise the financial aspects of his venture.

One evening McConnell, Decker and Mr. Jeffers got together and made their plans for this spring's planting and we were invited to sit in. It was decided to plant 30,000 balsam fir, 20,000 Norway spruce, 20,000 white spruce, 5,000 Colorado blue spruce, 1,000 Fraser fir, 14,000 Scotch pine and 10,000 red pine.

Most of Mr. Jeffers' forestry effort has been with plantations, but he is interested in his natural stands of young hardwoods which cover several hundred acres. Beautiful thrifty forests of hard maple, cherry, ash and basswood. The trees are less than fifty years old and run up to fifty feet in height and eight or ten inches in diameter. Too young to cut now, some day this timber will be valuable.

He is also interested in growing locust posts and this spring's plans include the

planting of shipmast locust from Long Island. Harford is a dairy country and you must have fences. He was appalled last year when two carloads of locust posts were shipped in from Maryland at \$1.25 a post, so he decided to do something about it.

Henry Jeffers is practicing real forestry in the hills of Susquehanna County. He is growing a forest crop on a short rotation reducing the risks of fire, insect and disease. Having already established a business, there is a good chance that it will be continued by those who follow him.

The weather had stayed fine, Mrs. McConnell's cooking had been all that was promised and our genial host had provided more than amply for our comfort. As we turned our thoughts to urban life and such perennial nuisances as timetables and bus schedules for the trip home, we regretted we could not stay longer in the Harford Hills.

## Sky-Fighters of the Forest

(From page 433)

experience is gained and training costs are pro-rated.

Airplanes are not new in the work of the Forest Service. They have been used for many purposes for several years. Each season scores of tons of freight and eagerly awaited mail are dropped to remote forest camps. A method has even been developed for dropping fresh eggs without breakage. Loaves of bread have been used for shock absorbers. 'Chute jumping grew quite naturally out of this earlier use of planes. And, in turn, other valuable services will grow from the 'chute jumping.

One of the first crews of jumpers contained a trained first-aid man. On one occasion he parachuted to the wreck of a Forest Service contract mail plane in one of the roughest sections of the Bitter-root Forest and provided the skill and equipment necessary to save the life of an injured man in the plane.

One young doctor, who formerly worked as a forest guard during medical school vacations, has practiced para-

chuting in order to speed emergency medical service in the back country.

It won't be long before 'chute supplies, 'chute medicines, and even 'chute doctors will be readily available to the lonely fire guards, marooned surveyors, or hapless hunters in need.

But "smoke jumpers," however picturesque and useful in certain undeveloped forest areas, will never replace ground fire fighters in most forest areas, for most fires are near roads, railroads, or outposts of some sort, and the majority of these are started by man's carelessness.

Nevertheless, with the impetus parachute fighting is receiving under war conditions, and with the number of trained parachutists who will be released at the end of the war, the present corps of smoke jumpers does presage the day when no forest fire, no matter how remote, will be more than a couple of hours from the sky fighters and the quick control that they offer.

## The Return of Long Pond

(From page 443)

patrols eliminated the scoundrels who had been driving the fish into nets attached to hoops that conveniently fitted between the narrow banks of the inlet. But licensed fishermen continued to catch their limit every day. The State Fish and Game Commissioner hurried to Long Pond with a quorum of his commission. They pow-wowed with perplexed forest officers. They observed the day's tally of 813 legal-sized trout. Long Pond was closed forthwith.

The unseasonable weather changed and the trout again dispersed from the deep holes. The "ban" was lifted but not before steps were taken to eliminate another such crisis.

Long Pond had not shot its bolt as a fish-producer. The next season at least 5,000 pounds of trout were caught, according to the local conservation officer, including a considerable catch to restock less productive waters. And it came to be more than a fishermen's

paradise. The New Hampshire Nature Camp used it frequently, considering it an ideal outdoor biological laboratory. The approach roads were improved, vistas cleared, picnic facilities provided, and parking areas opened, but the natural appearance of the shore line was preserved. Long Pond became a favorite objective for prominent vacationists from nearby Franconia and Sugar Hill.

## Adventure with Porcupine

(From page 427)

alone." There is more to us than appetite and passions. When our physical comforts are provided, there is still more needed to make us content. We must have in our human experience things that demand study, contemplation, things that surprise us, things which are not of our making. The ennui that arises from our attempts to live within our own inventions and cold economic adjustments of nature may be a greater threat to our survival than plague or pestilence. Therefore there is an answer, a fair one not fraught with impatience, to that question "What good is such-and-such a creature?" That creature is an opportunity for release. Look at him! Study him! See the marvelous way he solves his problems! Thus he causes you to forget yourself for awhile. There could be no greater good than this.

This has been our experience with Salt and Pepper. They have given us opportunity for thinking and observing, as well as for loving something that returns that love. They have confirmed most of the things which are generally known of their kind. They were born having quills, and already equipped with those four sharp teeth at the front of the mouth. Because of these teeth it is necessary for them to feed during babyhood through the side of the mouth. The quills were small, sharp, and dark at first. Later they turned to light gray, grew in size but lost none of their sharpness. The number of quills a porcupine has is variously estimated from twenty to thirty-five thousand.

But such facts are pretty well recorded. It was the personal side of our porcupines, their capacity for friendship and to learn things which interested us most.

Last autumn it was necessary to leave our pets for a period of six months. We

Such notable persons as Charles Evans Hughes and John D. Rockefeller, Jr., enjoyed its quiet informality.

But the proudest visitors will be the war-weary former enrollees who journey to Long Pond after the war to show the wife and youngsters where they poured concrete and swung an ax in a swamp that is no more.

locked up the cabin, placed beneath it a stock of fox bixcuts as reserve food for the porcupines, and left them otherwise to their own resources. The winter which followed was severe, one to test them to the utmost. But they survived, to give us experiences which are priceless.

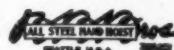
Returning in mid-May, we had not yet beached our canoe on the island when our first thrilling adventure of the season with Salt and Pepper came. We were fully two hundred yards away, talking happily about the many beautiful, familiar things about us, when out of the trees came a call, the same call that I heard outside my cabin this day! Our little pets had heard our voices, and recognized them. They remembered us favorably, in spite of our unexplained desertion of them, in spite of their battle with deep snows and sub-zero temperatures.

Needless to say, our paddles dug more deeply and our strokes quickened. On reaching the island shore we found the little fellows waiting for us, extending their front feet in greeting. It was a happy reunion that maintained its primary enthusiasm for many hours. In fact, we wished they would stop being quite so glad to see us. Everywhere we went, they followed. They climbed up on us, bit us, danced about us, until we could hardly unpack. There was no doubt but that they were in some manner conscious of how long we had been gone, and that they did not want us to go away again. Never before had they held to us so persistently as in that first period following our return.

We have counted the price we have paid for friendship with these animals. Two red pine trees, ten inches in diameter, have been destroyed. There are many smaller trees, perhaps three dozen

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altogether, which have been scarred. These include white cedars, balsams, white pines, maples, cherries, oaks and hemlocks. But the cost is not too high! We have seen friendship where we did not know it could exist. We have had our respect for living things raised to higher level, and felt new purpose and plan in creation. Simple creatures that they are, Salt and Pepper have added new impetus to our inquiry, set us to seeking fresh facts about the characters of animals, and made us realize anew that there is more to be learned than has ever been learned.

Salt and Pepper are quiet now. Salt is dozing on the doorstep, sitting on his hind legs and tail, his front feet wrapped about his nose, and his body describing a near-perfect circle. Pepper is all sprawled out, stomach to the ground, four feet turned with soles upward. Both are completely relaxed, completely at ease—offering another lesson the human race would do well to learn. But let me try to leave this cabin, even rattle a door-knob, and they will be awake instantly. Let me try to chop wood, and they will be right where I want to hit with the ax. Let me walk down a trail, and they will be following at my heels, grabbing at my trouser legs, and starting a tussle wherever I stop for a moment.

We are yet at the beginning of our adventure. We hope to learn much more from Salt and Pepper. They should live to be nine or ten years old, so there is promise of much opportunity. As they are male and female, we hope to learn something of their breeding habits, about which little is known since porcupines will not breed in captivity.

Yes, we like porcupines!

### CREDIT FOR PHOTOGRAPHS

Credit for photographs appearing in this issue is acknowledged as follows:

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Interior Department, Bureau of Reclamation—Pages 434, 435, 436 and 437.

Martinson, Melvin—Page 426.

Smith, Gordon K.—Page 445.

Stephenson, George C.—Pages 446 and 447.

Underwood and Underwood—Page 424 (upper).

U. S. Forest Service Photos—Pages 431, 432, 433, 440, 441, 444 and 457.

## WHO'S WHO

Among the Authors in this Issue

ROBIN WALKER (*Lumberjills of Britain*) is editorial director of publicity of the Scottish Amalgamated Trade News Agencies, and writes from Kirkcaldy, in Fife, Scotland.

SAM CAMPBELL (*Adventure With Porcupine*)—"Philosopher of the Forest"—is spoken of as an institution. Lecturer, traveler, author, photographer, lover of animals and friend of all mankind, his work reveals the very soul of the forest. Born in Illinois, Sam Campbell lives in and writes from his home in the North Woods—"Sanctuary"—at Three Lakes, Wisconsin.

E. J. KERR (*Sky Fighters of the Forest*), native of Ohio and a graduate of Stanford, in California, traveled 'round the world in 1938, since when he has worked in radio and publicity, as a staff writer and doing news features for a picture syndicate.

ALDEN COTTRELL (*Christmas Trees Take to the Field*) handles public relations work for the New Jersey Department of Conservation and Development, with which he has been associated for nearly sixteen years. He is a Yale Forest School man, class of '26.

P. L. BUTTRICK (*Britain's Post War Forest Plans*), Yale forester and author, is widely known professionally. His activities both here and abroad have encompassed interesting and important work in educational fields and as a technical consultant. His book on forest economics is reviewed in this issue.

GRACE KIRKPATRICK (*Beaches in the Desert*), of Spokane, Washington, turned her hobby of writing into a career, and her work has been published in travel and sports magazines of national scope.

ROBERT S. MONAHAN (*The Return of Long Pond*), attached to the Washington headquarters of the Emergency Rubber Project—a wartime activity of the U. S. Forest Service, is a Yale forester, class of '31. Familiarity with the region, plus winter studies made on the spot, give his account of the re-creation of Long Pond the authentic flavor of an eye-witness to the re-birth of this wilderness lake.

THE COVER—"Autumn"—The seed has fallen, white pine boughs drooping with the weight of cones. U. S. Forest Service Photo—by B. W. Muir.

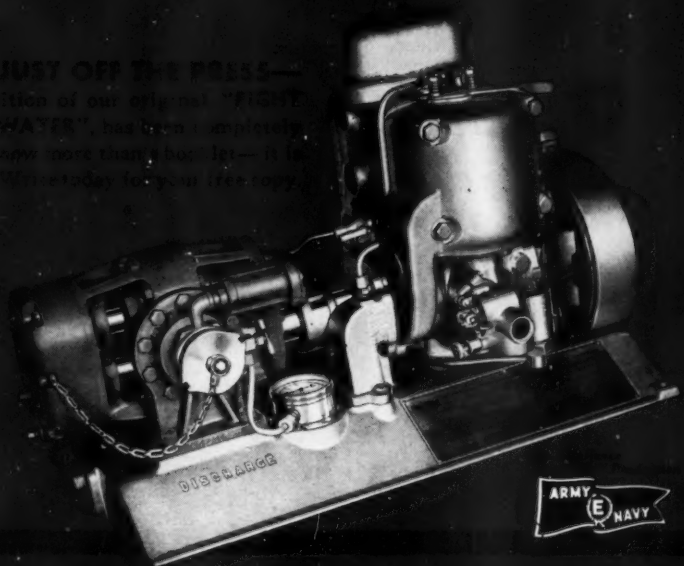


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## Tells How Lone Jap Tried to Fire Oregon Forest

PORT ORFORD, Ore.—(U.P.)—Witnesses were permitted today to describe a previously undisclosed attempt by a Japanese plane to start a raging fire in the Oregon forests.

The western defense command released the stories of the witnesses after it was announced at Washington that three enemy attacks have been made on the Pacific northwest. Two of the attacks had been disclosed previously.

The third occurred early on the morning of Sept. 29, 1942, when a lone plane, presumably catapulted from a Japanese submarine, flew over the lonely Grassy Knob Forest Service lookout station 10 miles east of here. The plane dropped a bomb into the dry bed of a creek 2½ miles below the lookout.

The Army previously had reported that an unidentified plane had been seen in the area.

pretty soon we heard it again, this time coming back toward the ocean," Zumwalt said. "The engine sounded smoother than it was turning over for the first time. It seemed to be a different plane."



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